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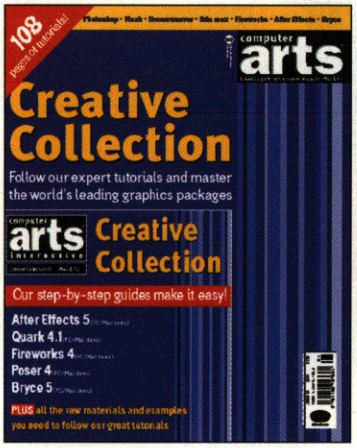

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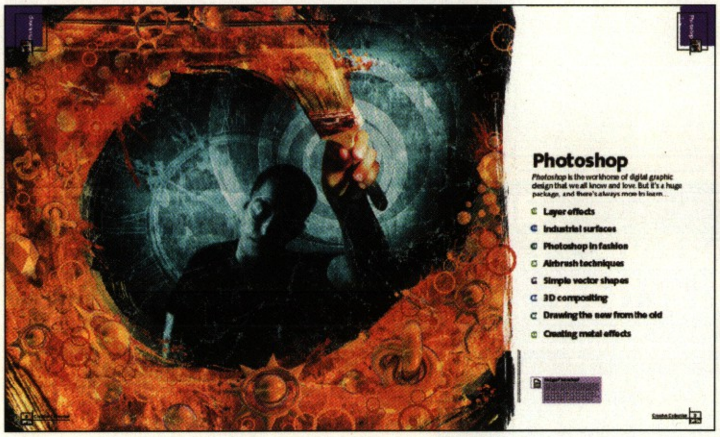
Welcome

To the *Creative Collection* – an almanac filled with tutorials from *Computer Arts*...

Since the early days of *Computer Arts*, our tutorials have always proven extremely popular. Every issue of the magazine contains new *Photoshop*, 3D and Web skills walkthroughs, bringing readers the latest techniques, as taught by our talented team of digital artists. Meanwhile, in our other monthly magazine, *Computer Arts Special*, we provide even more in-depth instruction with whole issues on specific subjects such as Illustration, Special Effects, *Flash* and *Photoshop*.

This year, we've decided to bundle all our best tutorials in what could almost be described as an annual. In doing so, we hope to introduce what we do to new readers — people who want to get up to speed on digital creativity fast. Plus, we're giving anyone who's missed issues during 2001 one more chance to follow any tutorials they haven't yet seen. The selection of tutorials in this *Creative Collection* is based directly upon feedback from readers who have already tried them and given us their verdicts. If you like what you see, remember to check out *Computer Arts* every month on the newsstand, or subscribe...



Photoshop

Photoshop is the workhorse of digital graphic design that we all know and love. But it's a huge package, and there's always more to learn...

- Layer effects
- Industrial surfaces
- Photoshop in fashion
- Airbrush techniques
- Simple vector shapes
- 3D compositing
- Drawing the new from the old
- Creating metal effects

08 Eight great Photoshop tutorials

Web skills

It may have taken a knock in the last 12 months, but the Web still offers an increasing number of opportunities for professional graphic artists...

- Creating a *Flash* film editor
- Designs on TV
- Fireworks 4: using the new features
- A tower block navigation system
- Interactive maps in *Flash 5*
- Interactive *Flash* techniques
- Layout and page design

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Refresh your acquaintance with *Fireworks* by following this tutorial on the new features in version 4

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If your site needs to include a map why not present it the *Flash* way, complete with live hotspots

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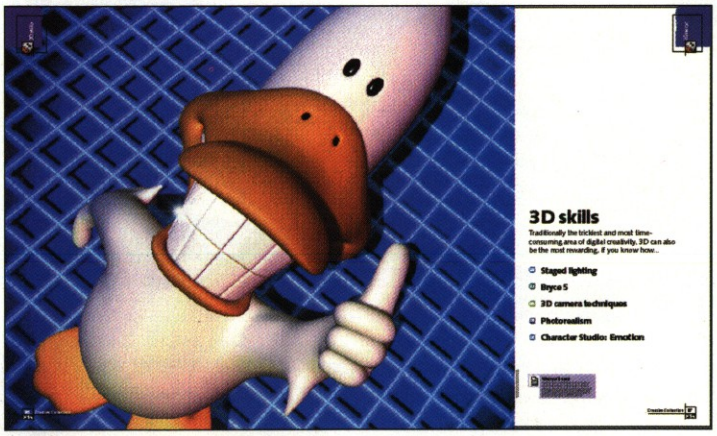
Some Web design basics for creating fresher-looking Websites



3D skills

Traditionally the trickiest and most time-consuming area of digital creativity, 3D can also be the most rewarding, if you know how...

- Staged lighting
- Bryce 5
- 3D camera techniques
- Photorealism
- Character Studio: Emotion

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Design a trendy CD label with five colours using *InDesign*

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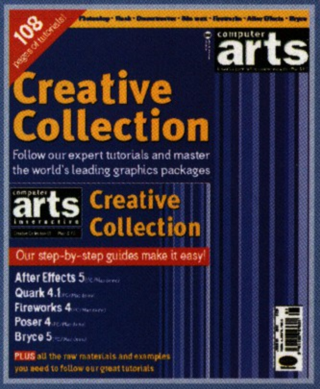

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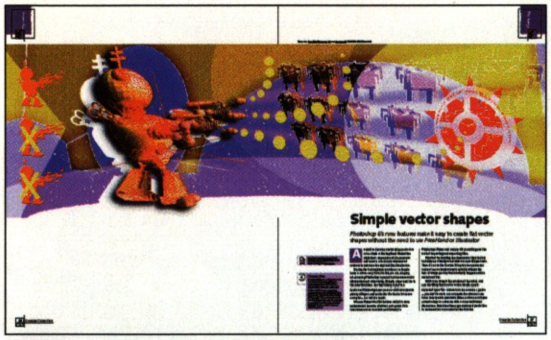
Simple vector shapes

Poser 4

Fireworks 4: using the new features

Part 1: Selective Optimisation

Fireworks 4

Bryce 5

Part 1: Setting up the document

Part 2: Creating the landscape

Bryce 5

Web video effects

After Effects 5

Smart cut-outs and runarounds

QuarkXPress 4.1

CDcontents [01/01]

Poser 4

Create and animate properly proportioned 3D characters with ease, using Curious Labs' amazing 3D application

QuarkXPress 4.1

The industry standard DTP app is called upon for a tutorial in our Miscellaneous section

Fireworks 4

Macromedia's Web graphics application does a great deal more than just compress images...

Bryce 5

Use the demo of *Bryce 5* to create convincing artwork. See page 92 and start following our tutorial...

After Effects 5

Adobe's video compositing and effects application now brings with it *Flash* export

Tutorial support files

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- Photoshop in fashion
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Illustration: Derek Lea [e] derek@dereklea.com

Photoshop

Photoshop is the workhorse of digital graphic design that we all know and love. But it's a huge package, and there's always more to learn…

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44 **Creating metal effects**

Not got Photoshop?
We've assumed that, as an accomplished digital artist, you will have a copy of *Photoshop* and so haven't included a demo on the coverdisc. If you don't have access to the application, you can download a fully functioning 30-day demo from the Adobe Website at [w] www.adobe.com

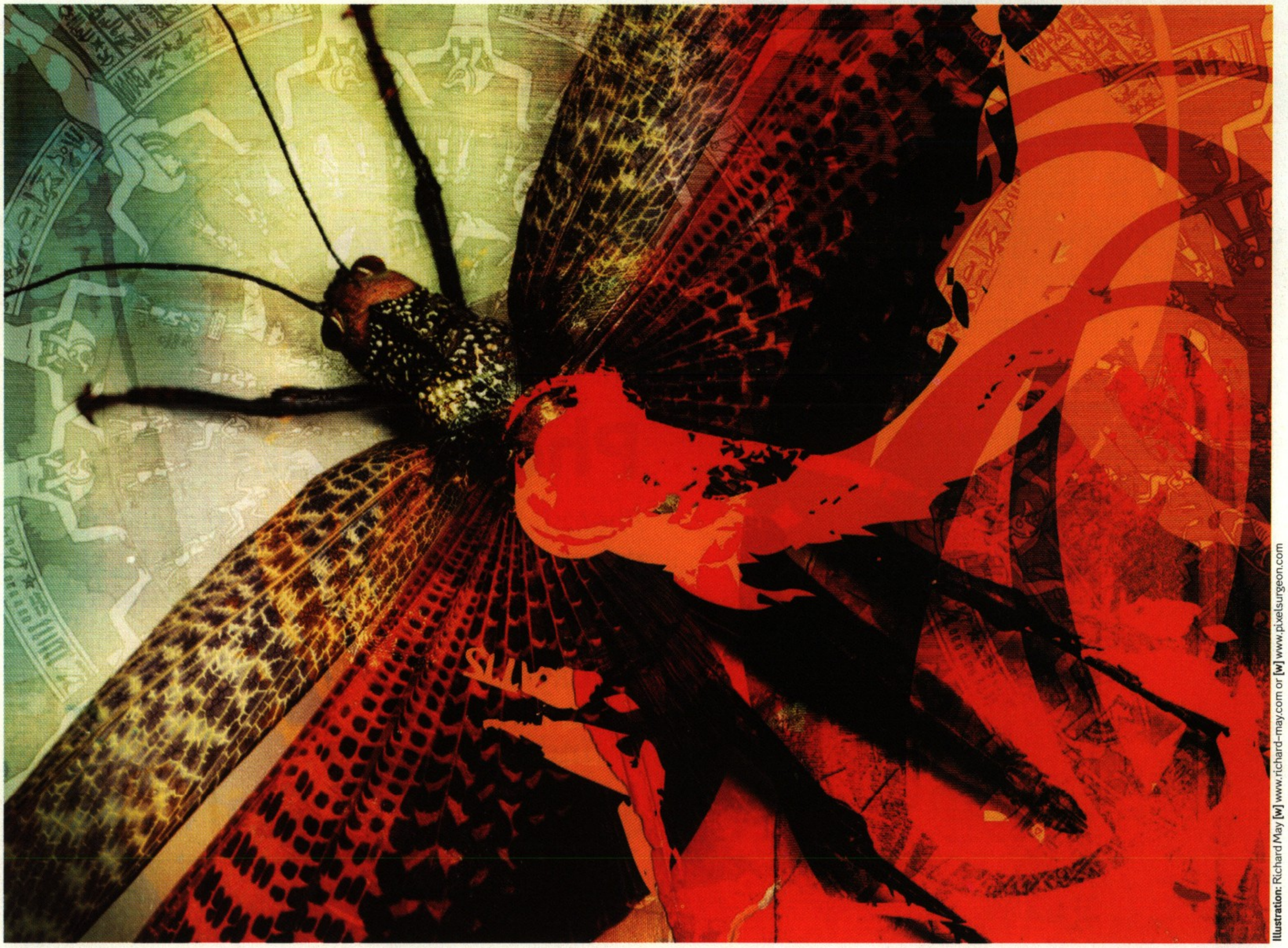


Illustration: Richard May **[w]** www.richard-may.com or **[w]** www.pixelsurgeon.com

Layer effects

Trying to pick a path through *Photoshop*'s myriad filters and operations can lead to a graphic overload. Instead, try doing more with less – stick to the basics and combine Layer effects to create an original design

It's very easy to become lost in the mire of a thousand filter commands and complex operations when designing in *Photoshop*. The sheer wealth of options often leads to lacklustre and generic dead-ends that could have been avoided if only a little restraint and original thought had been exercised.

Of course every effect and method of using the application has its place. This is partly why *Photoshop* is so popular – horses for courses as they say, and *Photoshop* certainly has horsepower by the cartful.

However, in this month's tutorial we're dealing with an entirely different animal altogether. We're going to leave those filters behind bars and stick to the more basic functions, along with a hefty dose of simple Layer effects. Along the way, we take an optional detour and explain how a few basic and familiar steps in *Illustrator* will aid your bitmap image construction.

You don't need a grasp of Layer masks or photo retouching here — in fact, this particular tutorial positively encourages you to leave everything very messy indeed. But, of course, where there is mess there is chaos, so we also explain how to balance this full on 'grunge' assault with some delicate touches.

Expertise provided by Richard May, [w] www.richard-may.com or [w] www.pixelsurgeon.com

Files and demos

Files to support this tutorial are on the coverdisc in the Tutorials\Photoshop\Layer effects folder.

Part 1: Experimenting with textures

Starting with the locust image, we'll alter the Contrast and Level settings and play around with the Colour Balance to create different effects

CMYK

Keep CMYK preview on at all times unless creating for screen work.

Cropping

Cropping like this is a neat way of keeping the bytes down when the layers pile up, but isn't essential. Always save before cropping, just in case you change your mind.

Soft light textures

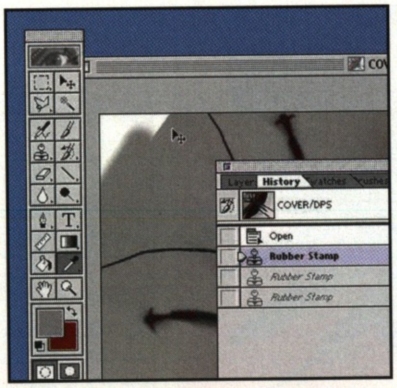
Duplicating Soft light textures is far more effective than producing one layer set at Hard light. You have more control over the level of 'burning', even if it is heavy on the RAM.

Company logo

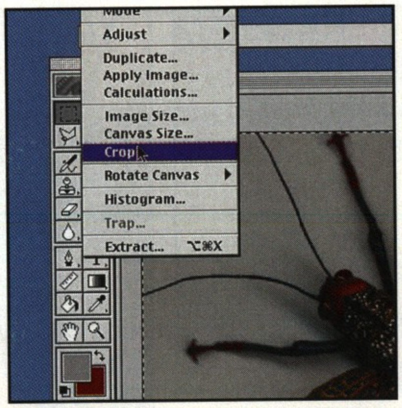
You won't see the logo under subsequent layers anyway, but it's a worthwhile precaution. Experiment with levels to heighten the white areas and increase the Contrast a touch.

PC Users note

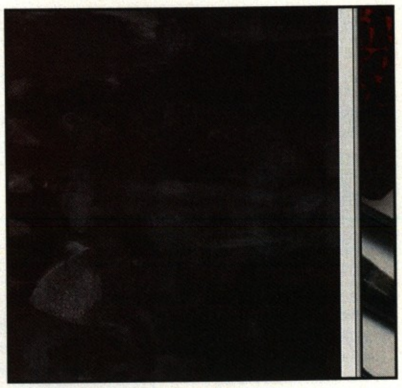
Throughout this tutorial, where a the Apple or Command keys are used, PC users should instead use the Ctrl key.



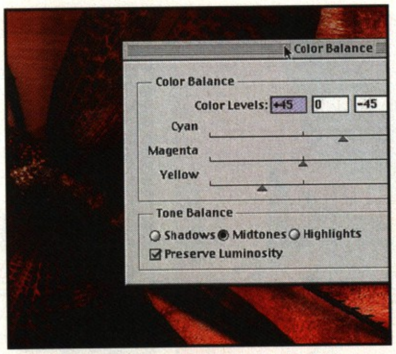
1 Create a new document, 240mmx285mm RGB (widthxdepth) at 300dpi – 355x285mm for the double page spread. Open locust.tif a nd drag and drop. Rotate the locust then use the Rubber Stamp tool to paint in empty areas.



2 Don't worry about cloning perfectly – it's not important. Press (Apple>A) to select the whole canvas and crop the image to chip those extra megabytes away.



3 Open texture-01.tif and play around with the Contrast and Level settings. Try and punch the finer detail out and don't be afraid to go too far. Interesting texture does what it says on the tin: it's how you use it that counts!



Color Balance

Color Balance

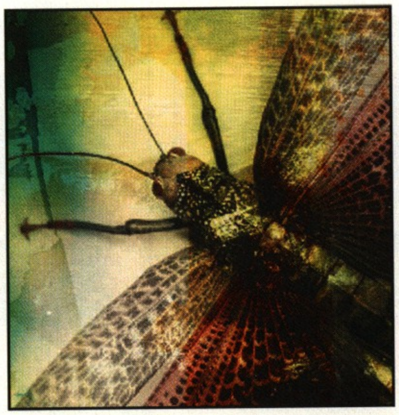
Color Levels: +45 0 -45

Tone Balance

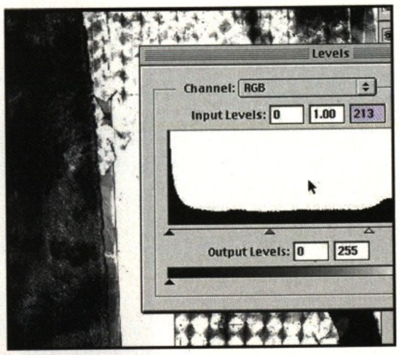
○ Shadows ● Midtones ○ Highlights

☑ Preserve Luminosity

4 Drag the texture on to your canvas and choose Multiply in the Layer Effects box. Open the Colour Balance sliders and give it a fair whack of red and yellow before clicking OK. Repeat this again on the same layer to achieve a nice blood-red hue. If you think you've gone too far, simply reduce the Saturation a touch.



5 Open texture-02.tif and drag and drop. Adjust the contrast as before and then choose Soft light. Duplicate the layer a few times to really burn in the texture and colour.



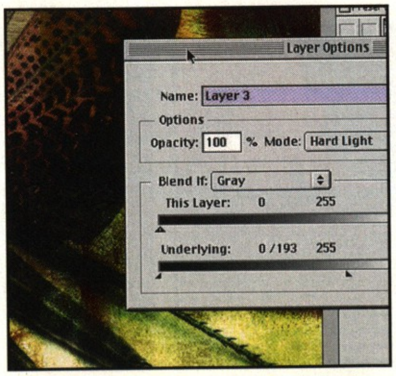
Levels

Channel: RGB

Input Levels: 0 1.00 213

Output Levels: 0 255

6 Open texture -03 and covert from greyscale to RGB. Before you drag and drop like before, adjust the Level sliders to clean the white areas up slightly. When you drag and drop, you can now select the white edge areas and stretch them to either edge of your canvas with the Scale option. Be careful not to stretch the contrasting black texture.



Layer Options

Name: Layer 3

Options

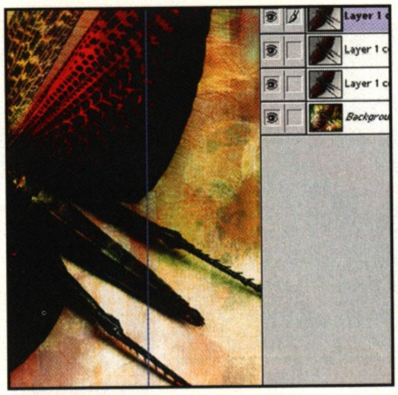
Opacity: 100 % Mode: Hard Light

Blend If: Gray

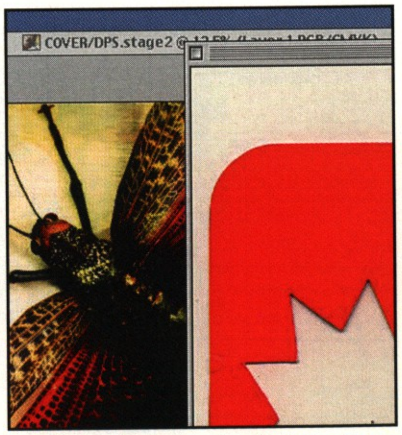
This Layer: 0 255

Underlying: 0 /193 255

7 Now when you choose Soft light, the hard edges of the original texture document will be flush to the edges of your canvas, creating a smoother, uniform effect. Experiment with the Colour Balance and reduce the Opacity a great deal for a subtle, ghostly feel.



8 Duplicate the Locust layer a few times and set all the Dupes to Soft light. Duplicate as many times as you wish to burn the colours in, altering the Colour Balance as you go. When satisfied, save this stage and crop the whole canvas again.



9 Open packaging.tif and use the Rubber Stamp tool to clone the red area and get rid of the company logo.

Part 2: Duplicating layers

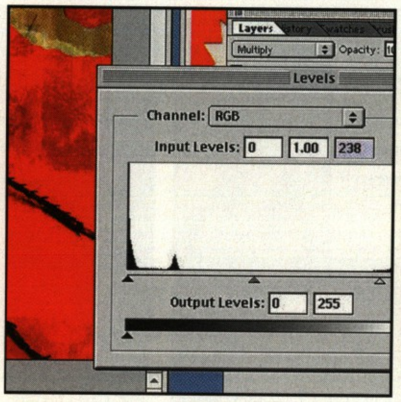
Piling layers on top of each other is a quick way to build up an abstract shape, but remember to keep the composition in mind

Wot no rules?

Just remember that with this style of work, the rule book goes out of the window. If it looks good then it is good, but don't forget to save different stages of the image.

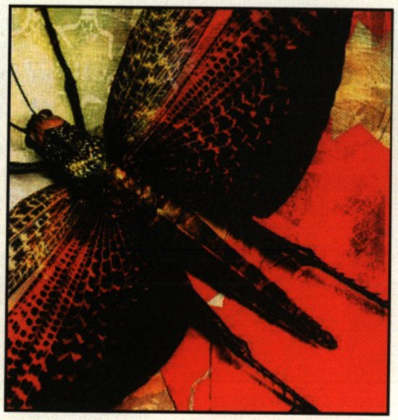
High res

You can open these in *Illustrator* and play around with colour and shape and so on, but if you don't have a vector package, rasterize at as high a resolution as possible. This means you'll have plenty of leeway when scaling in *Photoshop* and won't lose sharp vector-like edges.



Channel: RGB
Input Levels: 0 1.00 238
Output Levels: 0 255

1 Drag and drop on to the right side of the canvas and experiment with levels to heighten the white areas and increase the Contrast a touch. Choose Multiply and double-click the layer to play around with the sliders for various effects.



2 Duplicate the Packaging layer and set to Soft light. If this extra layer creates too strong an effect, then open the Layer sliders as above and play around further.

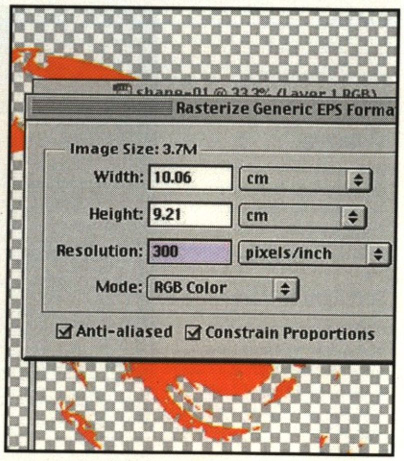
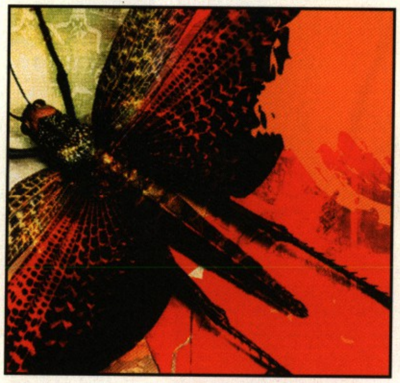
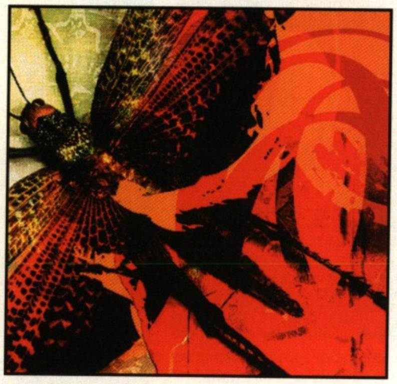


Image Size: 3.7M
Width: 10.06 cm
Height: 9.21 cm
Resolution: 300 pixels/inch
Mode: RGB Color
☑ Anti-aliased ☑ Constrain Proportions

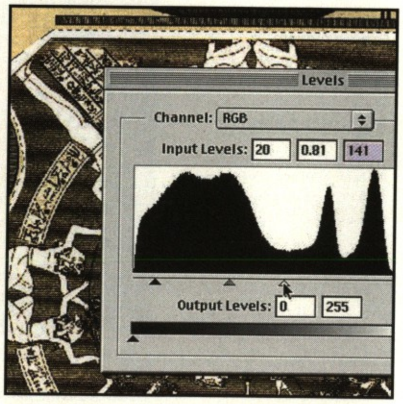
3 Now it's time to apply some 'cleaner' features. Open and rasterize all the EPS shapes.



4 This is where the fun really starts. Drop the bulkier shape-01 in the top right-hand corner of your canvas and then let rip with the Duplicate Layer option to create grungy, yet clean abstract shapes. Merge and delete these layers until you are happy.

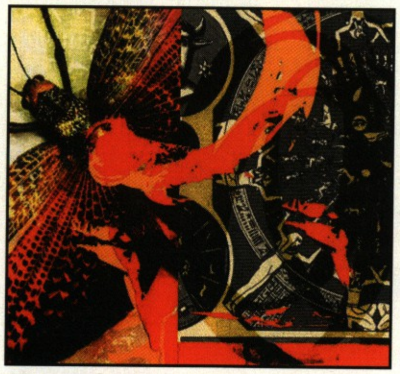


5 Try using various Layer effects on a few of them, such as Soft light and Multiply on the flowing ornate script shapes. Play around but think about dynamics – the script shapes are a good counterbalance to the grungy look of the image. Contrast and balance are essential to good design.

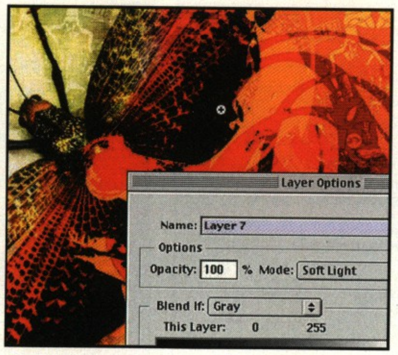


Channel: RGB
Input Levels: 20 0.81 141
Output Levels: 0 255

6 Open egypt.tif and open up the Level sliders. Be gentle – you don't want to eliminate the texture of the paper grain or create too high a contrast here. Increase the Contrast by a hair's breadth and drag and drop on to your canvas.

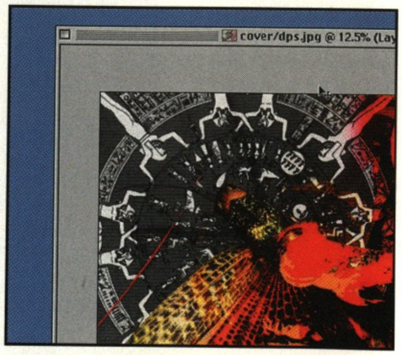


7 Bring the egypt.tif scan down in the Layer hierarchy so that some of the Shape layers overlap. But don't go too far down – you'll see why in the next step. Place the layer in the top-right canvas area.



Name: Layer 7
Opacity: 100 % Mode: Soft Light
Blend If: Gray
This Layer: 0 255

8 Choose Soft light, but before doing so, duplicate the layer and hide the Dupe for clarity. The image looks best if left between the numerous Shape layers. This way, some Shape layers are affected by the Soft light and some remain as block colour, creating a sense of depth.



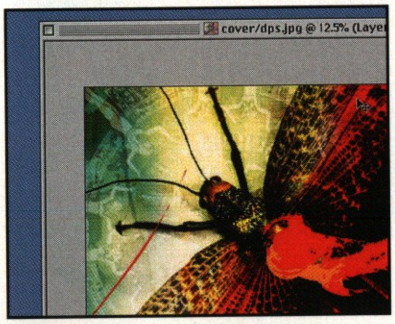
9 Bring the Dupe back and drag over to the top left. Before adding the Layer effect, reduce Opacity by 50 per cent so you can still see what you are doing. Then cut out the portion of the layer that overlaps key areas of the locust such as the head and lower wing.

Part 3: Finished, but not finished

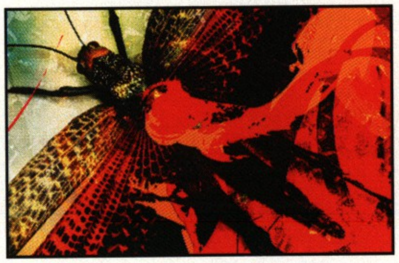
There are numerous possible options at this point, including recycling old artwork and adding extra lines and brushes

Composition

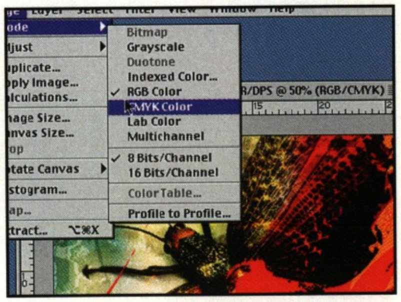
As you add layers and experiment, try not to pile up too many elements or things will become too confusing. Keep balance and composition in mind as you go.


cover/dps.jpg @ 12.5% (Layer

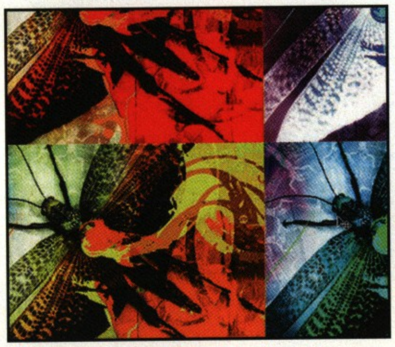
1 Once selected, hit delete and bring the Opacity back up, then choose Soft light. You can repeat these steps to add to the lower area of the image, or anywhere you see fit.



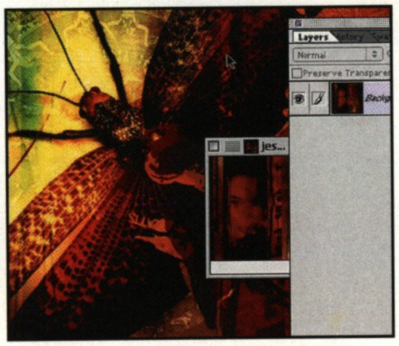
2 And there you go! You shouldn't try and create an exact duplicate of this illustration because it really is almost like a fingerprint. You'll discover new ways to work things every time you use these textures and shapes. Try scanning your own insects or other objects and see how they work with the other layers and textures.


Bitmap
Grayscale
Duotone
Indexed Color...
✓ RGB Color
CMYK Color
Lab Color
Multichannel
✓ 8 Bits/Channel
16 Bits/Channel
Color Table...
Profile to Profile...
/DPS @ 50% (RGB/CMYK)

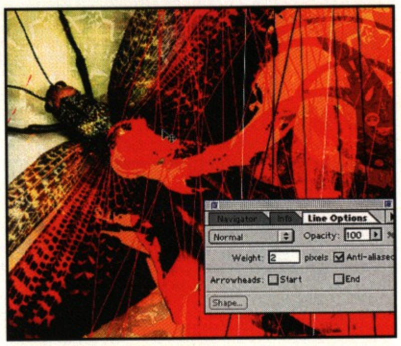
3 As indicated at the start, unless you're illustrating for screen you should work with CMYK preview on to eliminate any nasty surprises when it comes to printing your image. If you are printing, now is the time to convert to CMYK.



4 Flatten the image and play around with hues and saturations. You can also experiment with changing hues and contrasts in the unflattened image, but remember that colours look best when complementing each other. You don't have to stick to this, but keep in mind the 'feel' of the image.


Layers
Normal
Preserve Transparency

5 Another way to experiment is to open up other artwork that you have done, and drag and drop to your heart's content. Don't be afraid to recycle old artwork for textures and effects – this is the working method that underpins this style of illustration!

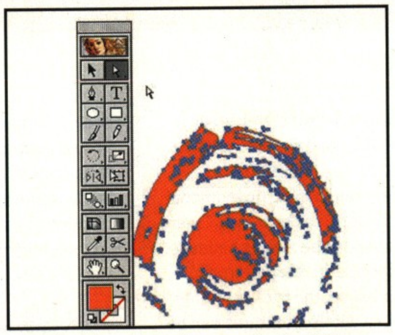

Navigator
Info
Line Options
Shape...

Normal Opacity: 100 %
Weight: 2 pixels ☑ Anti-aliased
Arrowheads: ☐ Start ☐ End

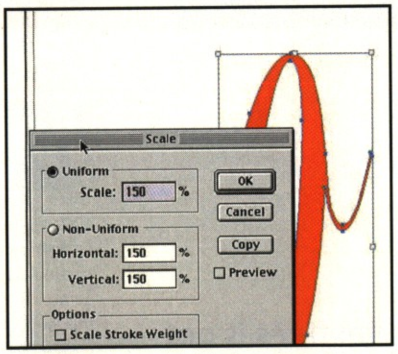
6 A further option is to add scratchy lines and scribbles to give your image that popular, unfinished feel. Simply use the Line tool and/or draw freehand with the mouse with the pencils and brushes. Experiment with various line weights and brush sizes, but keep things sharp for the right look.

Part 4: Importing and exporting

From *Photoshop* to *Illustrator* and vice versa

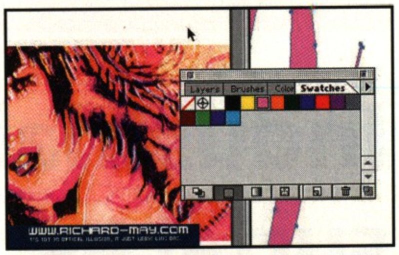


1 If you have the option, opening the EPS shapes in *Illustrator* will enable you to retain greater control of scaling and warping and you won't lose those sharp edges when the image opens in *Photoshop*.


Scale
OK
Cancel
Copy

● Uniform
Scale: 150 %
○ Non-Uniform
Horizontal: 150 %
Vertical: 150 %
Options
☐ Scale Stroke Weight
☐ Preview

2 Simply scale and stretch shapes to create a larger number of files – this gives you more options when composing the abstract shapes of block colour in the illustration.


Layers
Brushes
Color
Swatches
WWW.RICHARD-MAY.COM

3 Open any of your bitmap artwork in *Illustrator* and grab those colours with the Dropper tool to change the shapes. Bright pink is highlighted here to get the point across, but try and stick with your existing image colour spectrum. Maybe you could import low-res versions of the texture files to use as the basis for building swatches. If RAM allows, try and work with *Illustrator* and *Photoshop* open alongside each other for improved work flow. ca

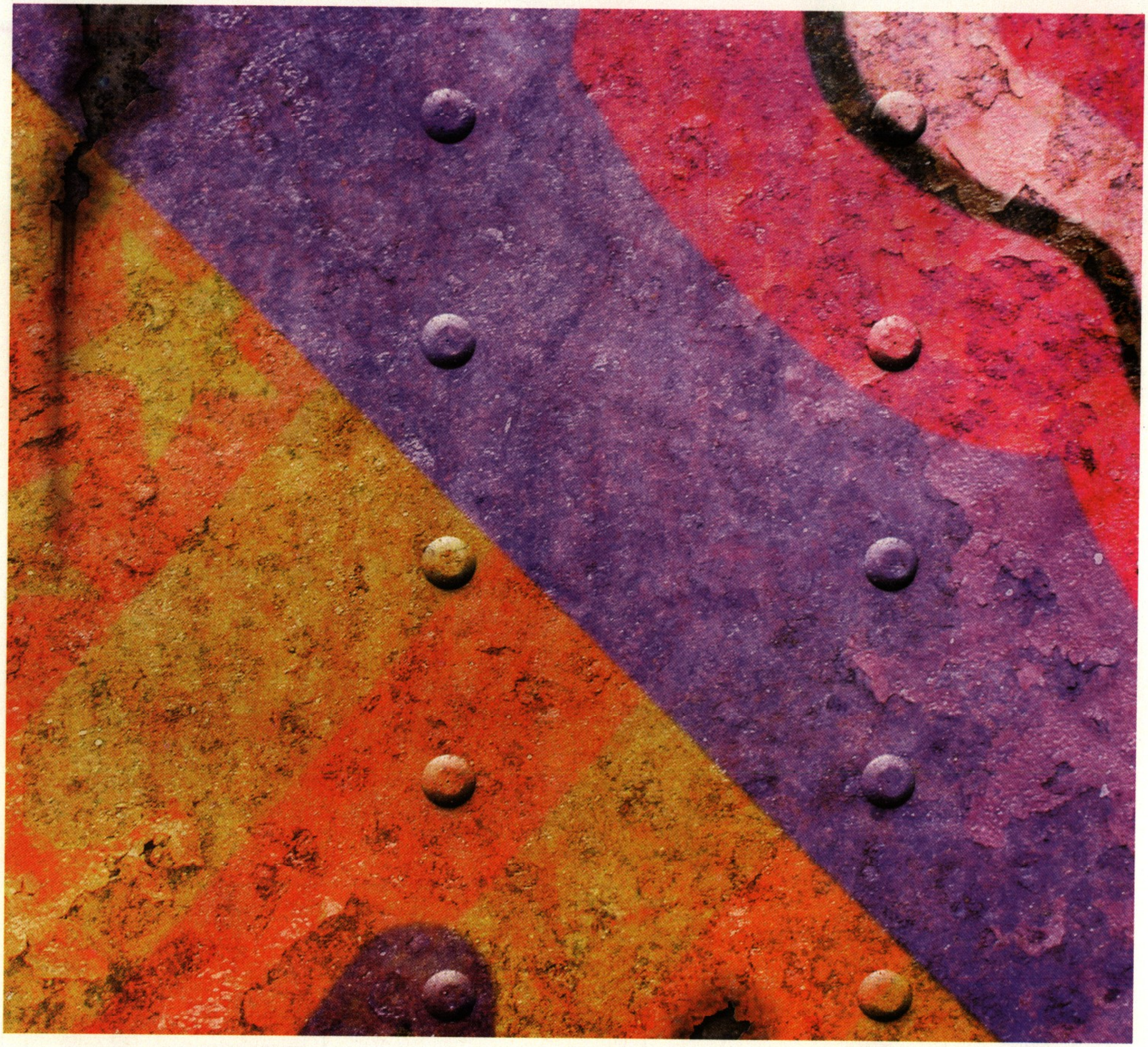


Illustration: Bill Fleming [e] bill@komodostudio.com

Industrial surfaces

Painting complex industrial textures is not as difficult as it may seem. It all comes down to mastering a few simple tricks…

Metal, rust, paint, grease, dust – industrial scenery is gritty, not pretty. Therefore, generating realistic industrial surfaces for 3D work, backgrounds, layers or Web wallpaper can be a real challenge, particularly if you're starting off from scratch in *Photoshop*. The trick is to limit the tools you use. Lifelike textures can be created by using airbrushes, fractal noise, blurs and layer blends. You may find it easier to master a few good tools rather than get familiar with many moderate ones. You may also wish to throw in some imagery captured with a digital camera to help the project along a bit. In the following tutorial, we're going to tackle the creation of a colourful, aged metal texture, the kind you might find on the side of a circus truck.

Tutorial files

The files required for this tutorial are on your CD in Tutorials\Photoshop\Industrial surfaces. Artwork and expertise supplied by Bill Fleming: email [e] bill@komodostudio.com or visit his Website [w] www.komodostudio.com

Generating an industrial texture

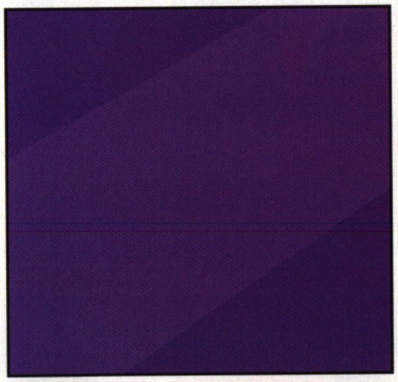
Digital artist Bill Fleming explains the entire process of creating a rough, rusty metal texture from scratch, entirely in *Photoshop*...

Selection tool techniques

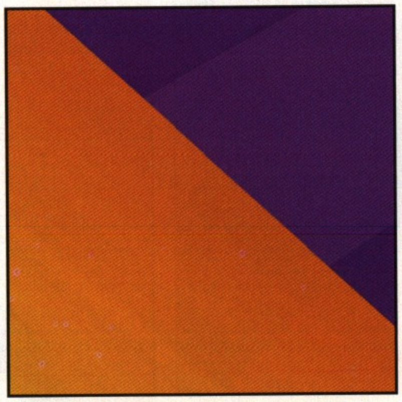
If you hold down the Alt key while using the Lasso tool you can create straight lines. To round the edges of these lines, as seen with the stars we created, you can Modify and Smooth the selection using a radius such as five pixels.

Digital cameras

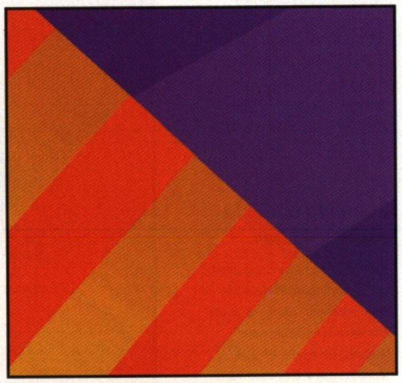
Digital cameras may prove to be a worthy addition to your texturing arsenal. As you can see by this tutorial, photo textures are essential for creating industrial art. You can collect thousands with a digital camera, though it may be better to purchase one that is capable of 1024x768 or greater uncompressed images. You don't want pixelated photos or your image will be a mess.



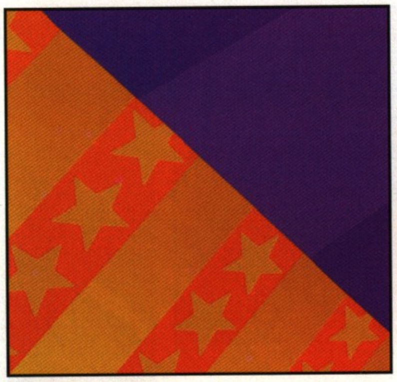
1 First we need to create an 800x600 image in *Photoshop*, then add a new layer and Fill it with RGB 125, 59, 177. Now, use the Selection tool to create two thick, diagonal lines, which we'll fill with RGB 95, 45, 134. Don't worry about the placement or thickness of the lines – this doesn't matter.



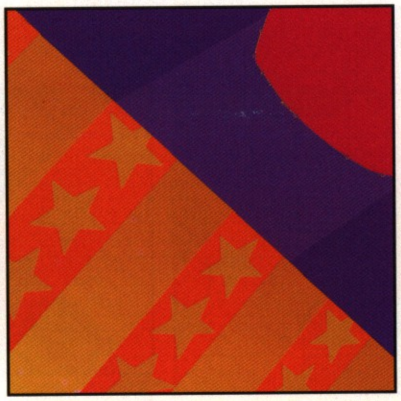
2 Add a new layer and Fill a diagonal selection with a blend from RGB 251, 189, 6 to RGB 236, 153, 0. The diagonal selection should run from the upper-left corner to the lower-right and the blend from the lower-left to upper-right.



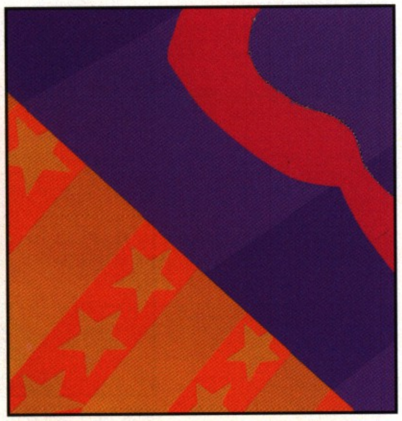
3 Now we need to add a new layer and select five diagonal lines over the yellow blend and Fill them with RGB 242, 112, 12. We can be sloppy with the edge of the selection and simply select Layer Transparent on the blend layer, invert the selection and delete the excess.



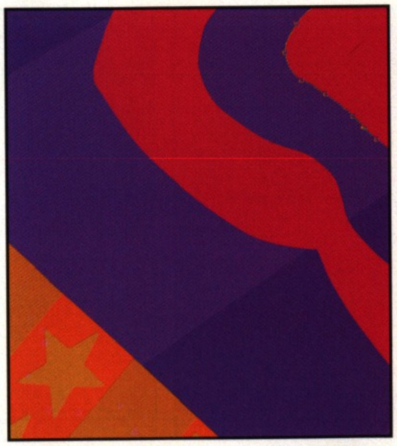
4 Now we'll create stars in the orange stripes by generating a new layer, selecting simple star shapes with the Selection tool and Filling them with RGB 241, 170, 3. The stars really don't need to be perfect – we're creating a texture that looks hand-painted, so we actually want flaws.



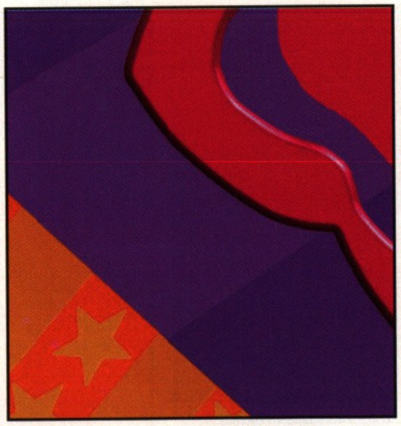
5 Add a new layer and create a new path. Then use the Pen tool to drop control points to form the curve. Hold down the left-hand mouse button and drag to create a control point with handles so we can edit the curve. Fill the path with RGB 198, 0, 75.



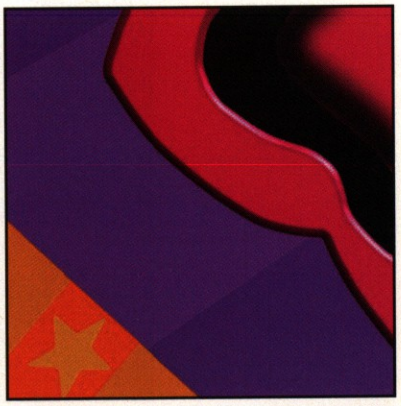
6 Next create a similar path – slightly smaller – inside the first one. Then 'Make Selection', turn off the path and delete the selection to knock out the colour in that region.



7 Now we'll generate one more path over the first one, even smaller than the last, and Fill that path with RGB 198, 0, 75.



8 Select the outside curve and Inner Bevel it with an angle of 120, a depth of 20 and a blur of 10. Use the Clone tool to cover the top and outside edges of the bevel so they bleed off the image.



9 Select the area between the pink spots and Fill it with RGB Black. Then select the Airbrush tool with a brush size of 40 pixels, a pressure of 25 per cent, the colour set to RGB Black and paint along the outside edge of the inner pink spot.

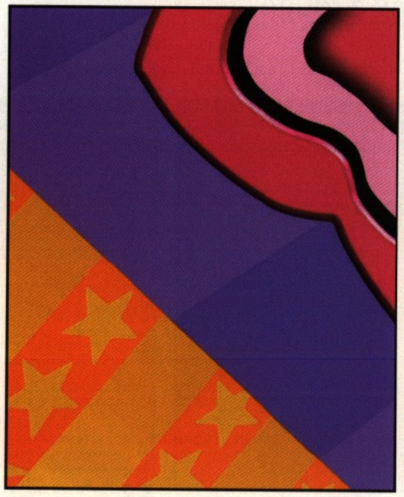
Generating an industrial texture, continued...

Layer blends

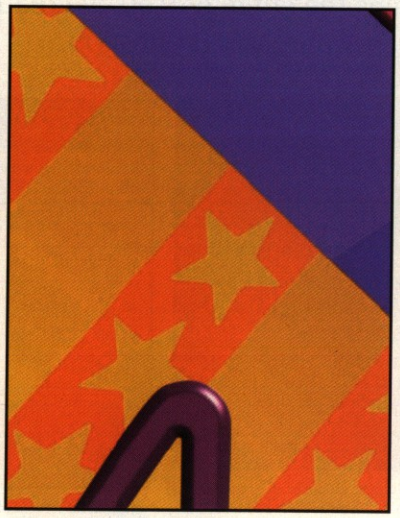
Using layer blends enables us to apply digital photos or images from texture CDs to our new textures to create completely original works. They also enable us to add attributes of the photo textures, while still maintaining those of the layers below. Often you'll find you use as many as ten photo textures on layer blends to create industrial textures.

Blending multiple photo textures

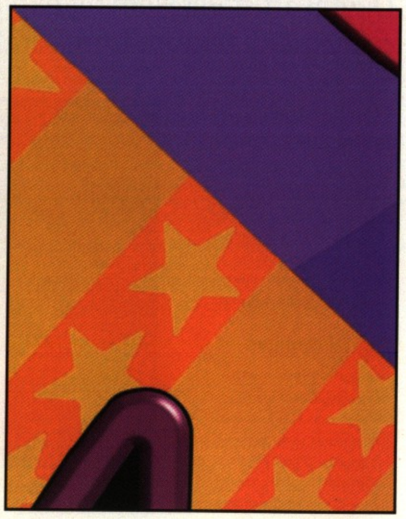
You will rarely find a single photo texture that has the details you need – it's more likely that you'll find them in multiple photo textures. The beauty of layer blends is that you can use many different photo textures on layers to add all the details you want. For example, one texture may have great scratches, another corrosion damage and yet another might have perfect gouges. All can be blended to achieve the perfect texture to suit your needs.



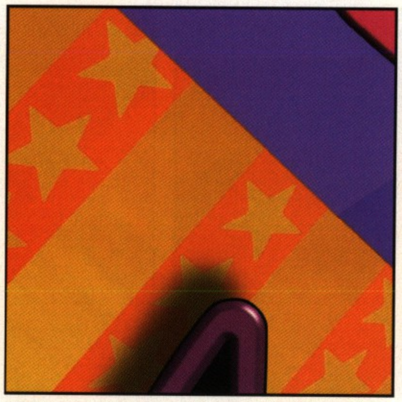
10 Now create a new path selection over the black spot and Fill the path with RGB 237, 157, 184. The path should be narrow enough so we can see the left side of the black fill and the soft feathered black on the right-hand side.



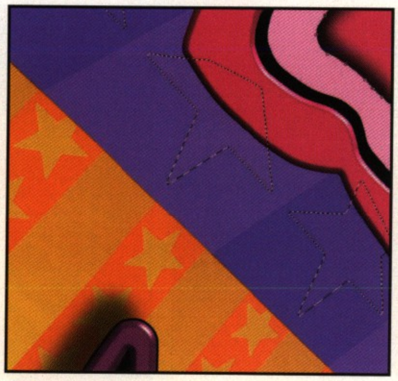
11 In the lower middle area, create a new layer then a new path shape that looks like the corner of a triangle. Then Fill the path with RGB 130, 44, 85 and Inner Bevel it as we did in Step 8.



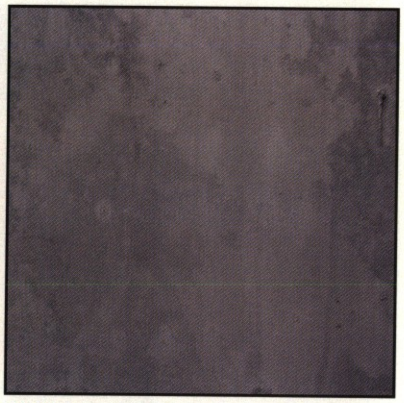
12 Now we'll add a new layer below. Select Layer Transparent on the triangle layer, 'Expand' the selection five pixels and Fill with RGB Black. This creates a black Fill in the centre and a thin border.



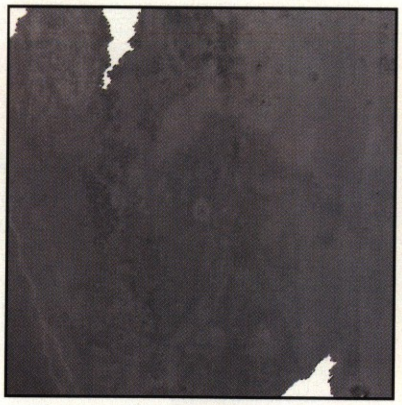
13 Next, add another new layer below, select Layer Transparent on the triangle layer, Feather the selection 15 pixels and Fill with RGB Black. Finally, change the layer's opacity to 50 per cent – this will lighten the shadow.



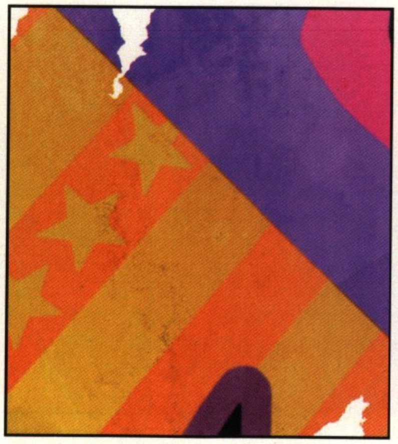
14 Our last step in creating the colour section is to create a new layer under the pink shape one, make three larger star-shaped selections over the purple stripes, then fill the centre one with RGB 137, 64, 194 and the outer two with RGB 106, 50, 150. The outer two stars will only show the corners.



15 Now we'll deselect the background layer and 'Merge Visible'. Activate the background layer, deactivate the merged colour layer, load the Metal.jpg image from your CD and paste it as a new layer just above the background one.



16 Next, use the Lasso tool to make irregular selections on the top and bottom of the Metal layer, then delete the selection. These deleted areas represent where erosion has eaten away the metal. We'll be putting a new texture in the holes shortly.



17 Now to set the colour layer, giving it a metal texture. 'Layer Blend to Overlay' will blend it with the metal texture below.

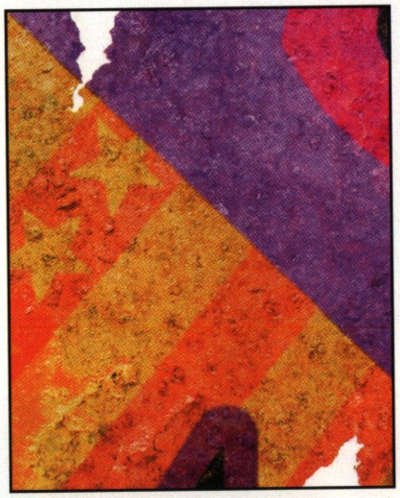
18 To add more metal texture, load the image Corrosion.jpg from your cover CD and paste it as a new layer above the colour layer.

101 uses for industrial textures

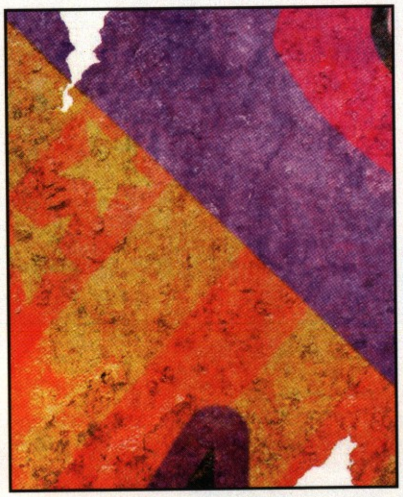
Well to name a few, this texture could be used as a 3D texture by creating the bump and specular textures to form the colour texture. Or it could be used as the background for a video-titling sequence. It also makes superb industrial art.

Digital photos

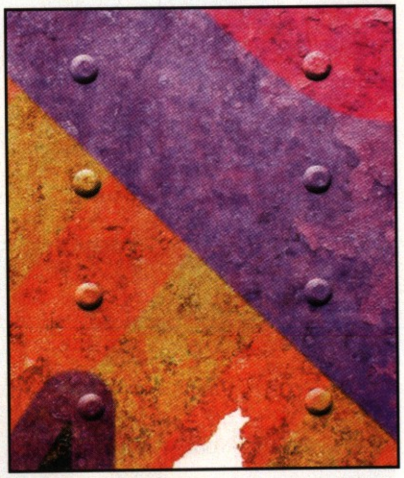
The great thing about photo textures for industrial art is they don't need to resemble any particular detail. You're just collecting all kinds of images that could be of use further down the road. Even the most mundane of photo textures can create some amazing results when used in industrial textures.



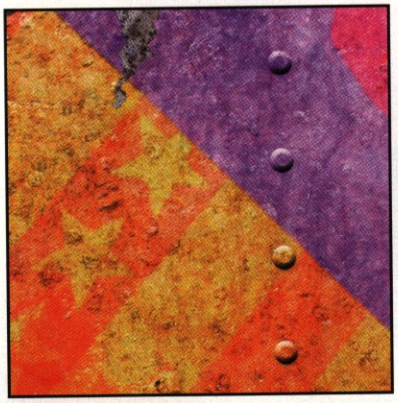
19 Set the layer blend to Hard Light with an opacity of 71 per cent. Finally, select Layer Transparent on the Metal layer, then invert and delete the selection. We now have a very rough corrosion texture on our painted metal.



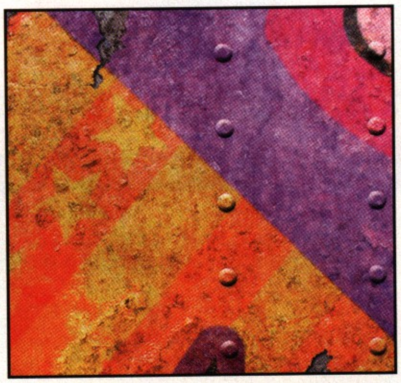
20 Load the Scuffs.jpg image from your CD and paste it as a new layer above the Corrosion layer. Then set the layer blend to Soft Light with an opacity level of 100 per cent. This adds some subtle scuffs to the metal texture.



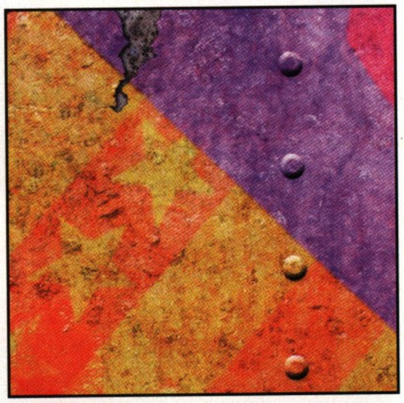
21 Next, load the Rivets.jpg image and paste it as a new layer above the Scuffs layer. Set the Hard Light blend to Soft Light with an opacity level of 100 per cent. This adds two rows of five rivets to the metal texture. Next we'll add a metal texture in the corrosion holes.



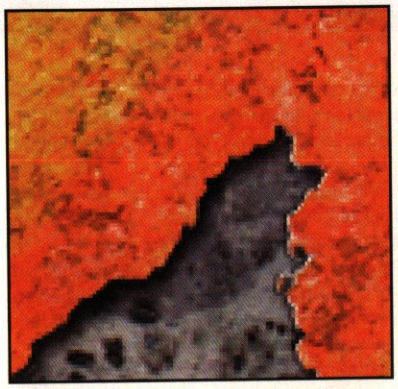
22 Add a new layer above the Corrosion layer, Select Layer Transparent on the Metal layer, invert the selection and then 'Paste Into Selection' the AlienMetal.jpg image. Now set the layer blend to Difference with an opacity of 100 per cent.



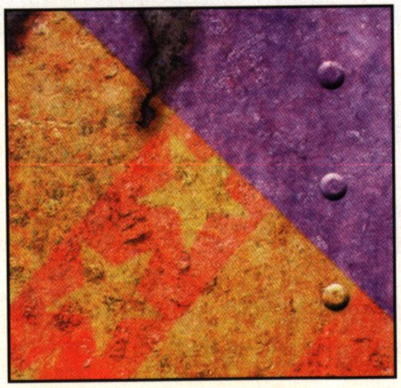
23 Now we need to create a new layer above the AlienMetal layer, select Layer Transparent on the Metal layer and invert the selection. When you've done this, select the Airbrush tool with RGB Black and a brush size of ten pixels, and then paint some small lines on the left edge of the selection.



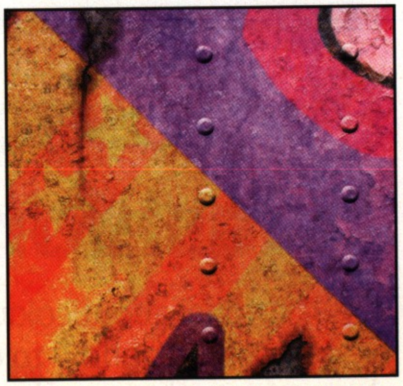
24 With the selection still active, Stroke it with a width of one pixel along the outside, using a blending of 100 per cent opacity and Multiply mode. The Stroke colour is RGB Black. This Stroke adds thickness to the edge of the surface metal.



25 Next add a new layer and repeat the same Stroke with RGB White. Then use the Eraser tool to remove the stroke on all edges that are on the left side and underside on the right edge of the selection. This white stroke creates the specular highlight on the surface metal.



26 To add rust to the edges of the holes we'll add a new layer, set the Airbrush colour to RGB 179, 127, 84 and the brush size to 30 pixels, then paint along the centre of the hole edges. Set the layer blend to Multiply with an opacity of 50 per cent to render the rust to the texture below.



27 The final step is to create dripping rust under the holes by setting the Airbrush size to nine pixels and painting streaks under the low point of the holes. We've used repeated overlapping stokes to darken the rust, making the centre of the drip darker than the outside. ca

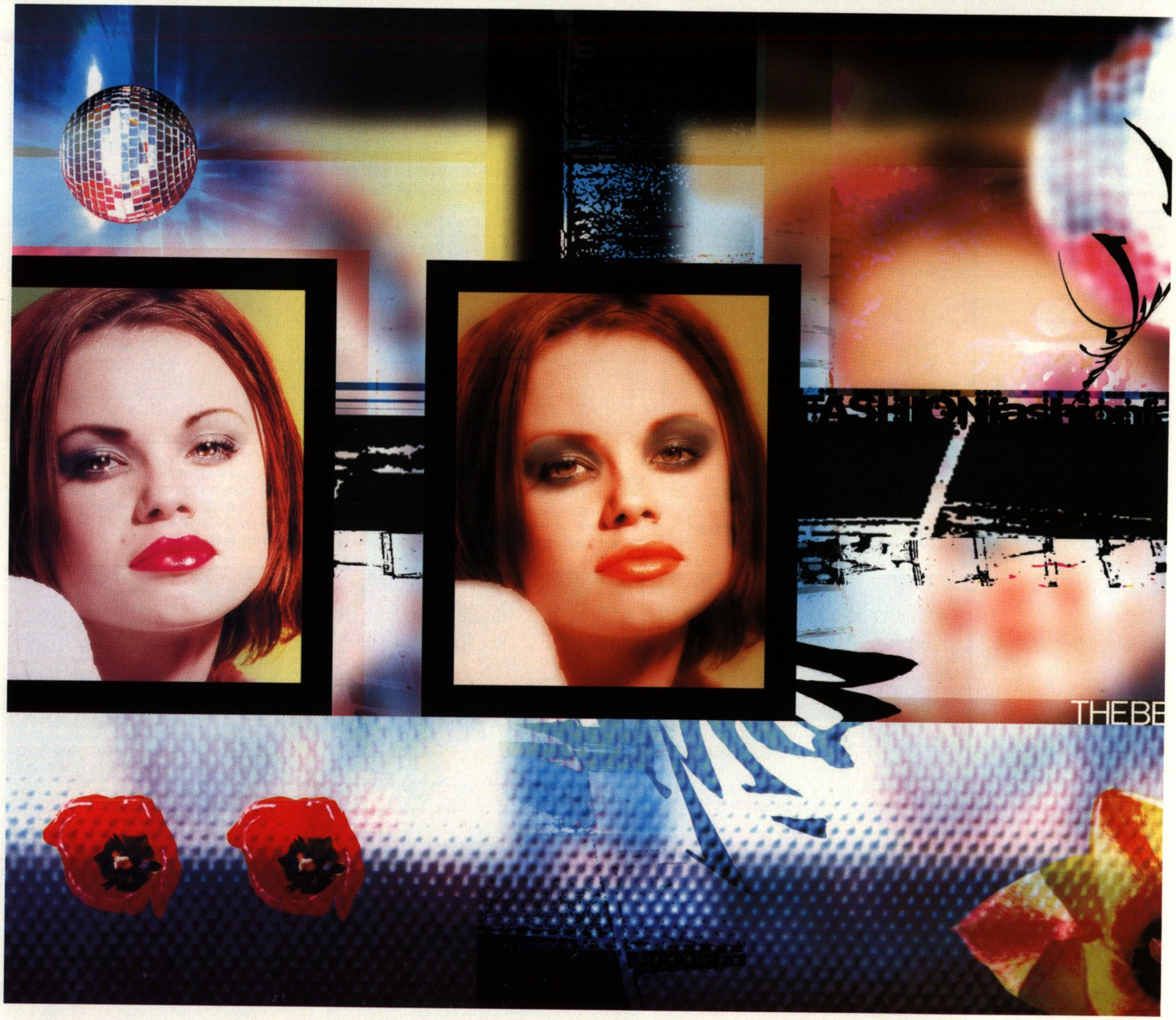


Illustration: Frank Bartucca **[t]** 01761 233 324

Photoshop in fashion

In this tutorial about colour correction, we take a look at how to enhance model shots with make-up effects…

Portraits can suffer from a variety of problems, and here we show you how to create make-up effects to perfect your images.

One of the first problems you may encounter is the lack of light in the area of the eyes. But with a simple and effective technique, the eyes can be lifted out of the shadows to make them really stand out. Also, duplicating and blurring an image can work wonders when set to the right layer blending mode – it smooths out any unevenness in the skin, giving a highly made-up finish.

First, we'll enhance the look of an image by changing the colour of the eyes and hair, keeping the image realistic. Next, we'll use painting techniques and blending modes to create two distinctive looks and achieve a more stylised image. These methods can produce great results without expensive photoshoots, stylists or make-up artists. Effects like lipstick and eyeshadow can be applied to any photo, whether you're using a commissioned studio shot or a stock library photo.

Tutorial files

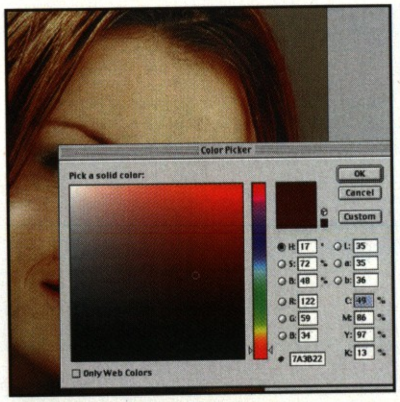
The files you need to complete this tutorial are on your CD in Tutorials\Photoshop\Photoshop in fashion. Expertise supplied by Frank Bartucca. Contact him on [t] 01761 233 324 or [e] madfrank@bartucca.dircon.co.uk

Part 1: The make-over

Using simple techniques, we'll enhance this portrait shot by changing the colour of the eyes, hair and lips before applying eyeshadow…

Soft light

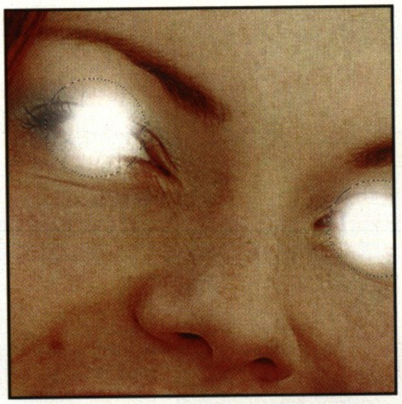
When applying colour to skin tones on a separate layer, the most natural result is achieved by using the Soft Light layer blending mode.



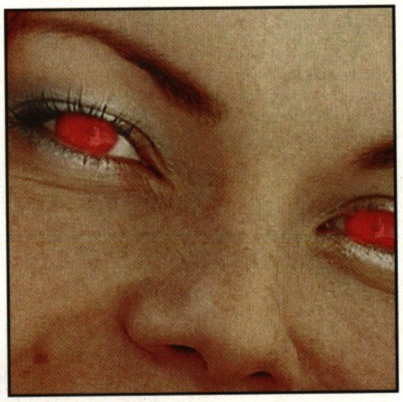
H: 17 °, S: 72 %, B: 48 %, R: 122, G: 59, B: 34, L: 35, a: 35, b: 36, C: 49 %, M: 86 %, Y: 97 %, K: 13 %, # 7A3B22

☐ Only Web Colors

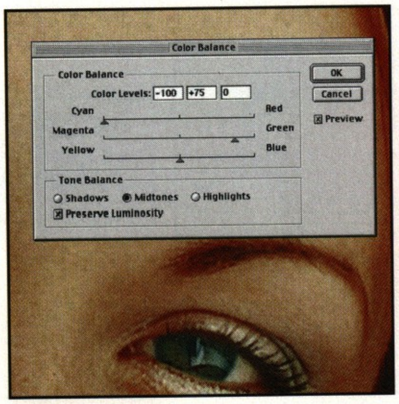
1 Open the file makeover.tif from your CD. The skin tones are too cold, so we're going to warm the whole image by applying a sun tan. We have chosen a rich brown colour from the model's hair to fill a new layer. Set the layer to Soft Light.



2 Now we're going to lighten the eyes. Add a new layer, and with a brush just bigger than the pupil, dab the eyes with 100 per cent white. Then with a much larger brush set to 50 per cent, dab over the same area again. Set this layer to Soft Light.



3 To make the eyes stand out even further we're going to change the colour to green. Press Q on the keyboard to enter Quick Mask mode, and with a small brush, paint out the pupils. Press Q again to select the mask.



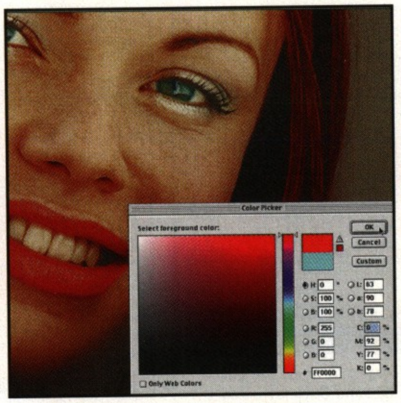
Color Balance — Color Levels: -100 +75 0

☒ Preview

Tone Balance — ○ Shadows ● Midtones ○ Highlights

☒ Preserve Luminosity

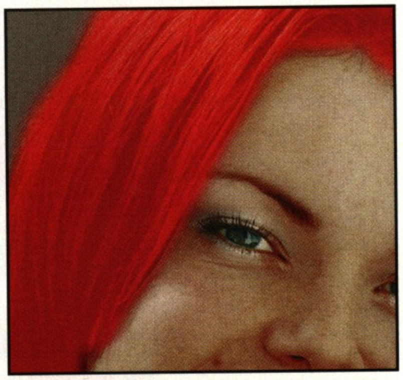
4 Add a new Colour Balance Adjustment Layer. The selection now becomes the layer mask. In the Colour Balance dialog box, set the Shadows to -43, -43, 0, and the Midtones to -100, +75, 0. Check the Preserve Luminosity box if it isn't already.



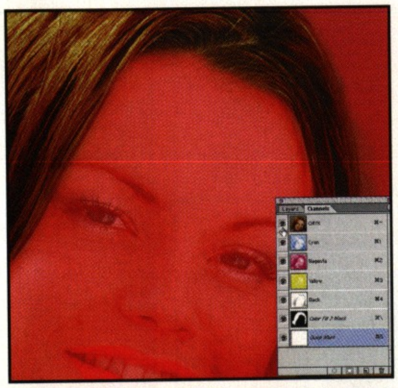
H: 0 °, S: 100 %, B: 100 %, R: 255, G: 0, B: 0, L: 63, a: 90, b: 78, C: 0 %, M: 92 %, Y: 77 %, K: 0 %, # FF0000

☐ Only Web Colors

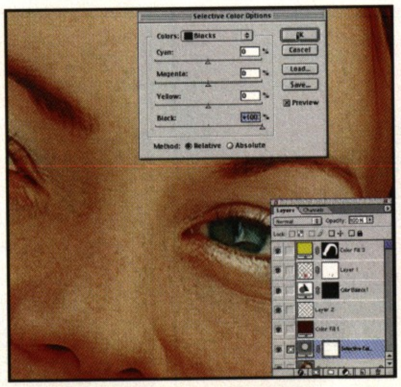
5 The lips need an extra lift, too. Choose the brightest red in the spectrum, then paint carefully over the lips on a new layer with a suitable brush size. Set this layer to Soft Light to give the lips a bright red gloss finish.



6 Now for some hair dye. We're only going to enhance the colour, so we can get away with using a big brush to make a Quick Mask. Press Q to select the mask, then add a new layer and a layer mask. Fill the layer with 100 per cent yellow and set the blending mode to Soft Light at 50 per cent.



7 To tidy up the mask, choose a smaller brush set to 50 per cent opacity and paint around the edges, pressing X to flip from black to white and to add or subtract from the mask. Use Quick Mask mode by pressing Q, then clicking on the eye icon next to the CMYK channel in the Channels palette.



Colors: Blacks

Cyan: 0 %

Magenta: 0 %

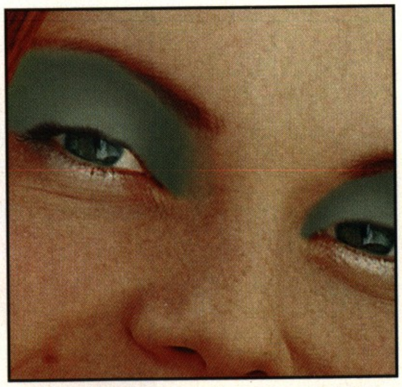
Yellow: 0 %

Black: +100 %

☒ Preview

Method: ● Relative ○ Absolute

8 To increase the depth of the eyelashes, add a Selective Colour Adjustment Layer above the background layer. Select Blacks in the Colours dropdown menu and increase the Black output to +100. Select 'Relative' for the Method to generate a more subtle effect.



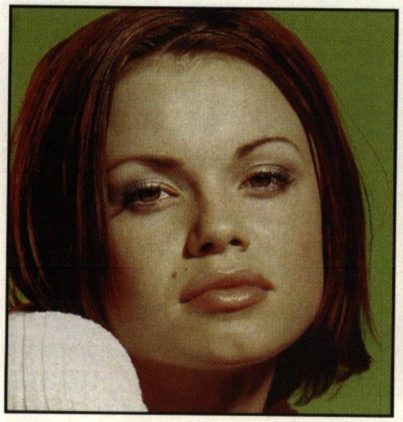
9 Now for eyeshadow. Add a new layer above the last one, select a colour from the eyes and paint between the eyes and eyebrows. Set the layer to Soft Light and use a layer mask to soften the edges, with a brush set to opacity varying from 50 per cent to 30 per cent.

Part 2: Achieving a fashionable look

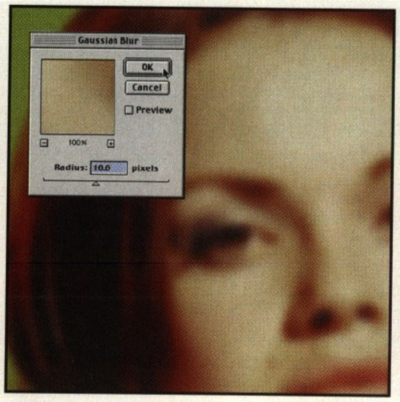
Now we'll apply a narrow depth-of-field effect and a simple way of smoothing the skin, as well as some subtle make-up effects…

Duplicating

Duplicating an image and then setting the layer to different blending modes gives interesting results, while retaining a lot of the colour and contrast.

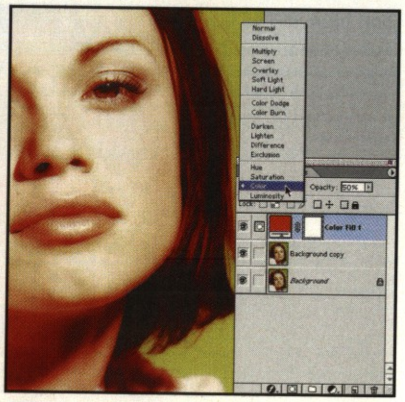


1 Open the fashion.tif file from your cover CD. This image has fairly good tonal values, and will give us a decent starting point for applying techniques to achieve a stylised look.


Gaussian Blur
OK
Cancel
Preview
100%

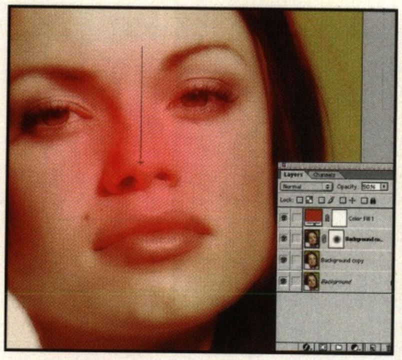
Radius: 10.0 pixels

2 First duplicate the layer and apply a Gaussian blur of 10 pixels, then set this layer to Overlay. Notice how the various colours intensify and the blur smooths out the skin. This technique gives a quick airbrush effect without the hassle.


Normal
Dissolve
Multiply
Screen
Overlay
Soft Light
Hard Light
Color Dodge
Color Burn
Darken
Lighten
Difference
Exclusion
Hue
Saturation
Color
Luminosity
Color Fill 1
Background copy
Background

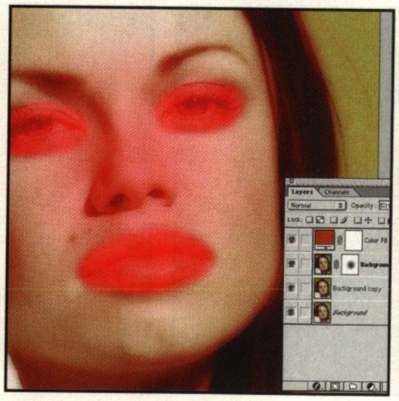
Opacity: 50%

3 Add a new layer and fill it with a bright orange. Now set the layer blending mode to Colour to give an effective duotone. Reduce the effect by bringing the layer opacity down to 50 per cent – this will let some of the colour back into the image.

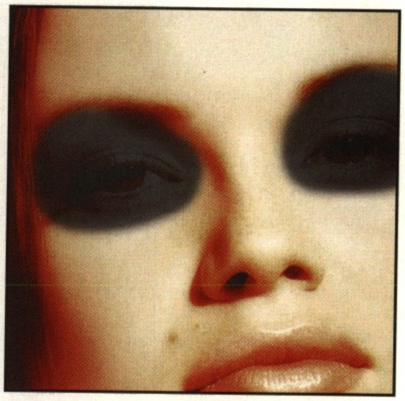

Layers
Channels
Color Fill 1
Background copy
Background

Normal
Opacity: 50%

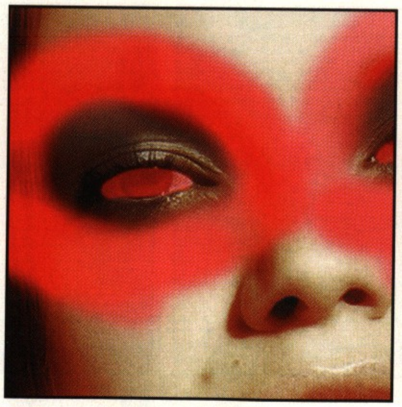
4 To achieve a narrow depth-of-field effect, duplicate the Background Copy layer and Radial blur the layer, setting the Amount to 25, Method to Zoom and Quality to Good. Add a layer mask and set the layer to Normal at 50 per cent. Apply a Radial Gradient (black to white) from the tip of the nose to the forehead on the layer mask.


Layers
Channels
Normal
Opacity
Color Fill
Background copy
Background

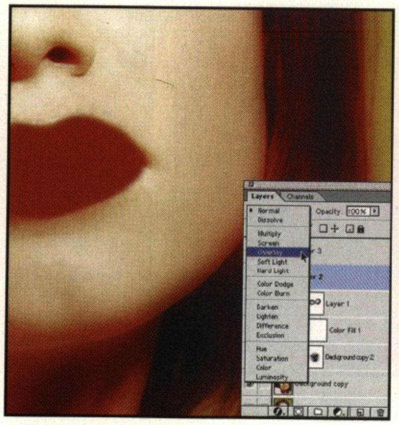
5 Choose a suitable brush and paint out the eyes and mouth with the blending mode on Multiply. This brings the eyes, nose and mouth into focus while keeping the rest of the image blurred. You can set the layer to Multiply to deepen colours.



6 Now for adding eye make-up. Create a new layer above the others, and with a medium brush, paint over the eyes with 100 per cent black. Set the layer blending mode to Colour Burn at 50 per cent opacity to give a high-sheen effect.

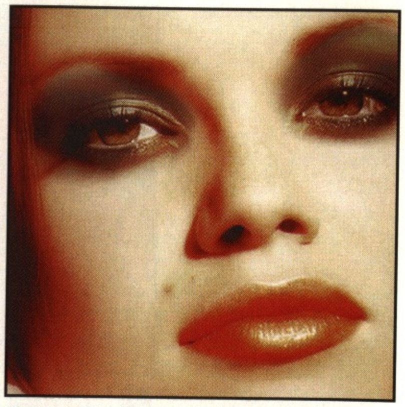


7 Now add a layer mask to this layer, and with a large brush (about 100) loaded with 50 per cent black, paint around the edges to blend in the effect. Then paint out the eyes with quite a small brush set to 50 per cent.


Layers
Channels
Normal
Dissolve
Multiply
Screen
Overlay
Soft Light
Hard Light
Color Dodge
Color Burn
Darken
Lighten
Difference
Exclusion
Hue
Saturation
Color
Luminosity
Layer 1
Color Fill 1
Background copy 2
Background copy

Opacity: 100%

8 Add a new layer. Sample a light brown colour from the edge of the hair and with a small brush, carefully paint over the lips. Set the layer to Overlay to give the lips a golden orange colour.



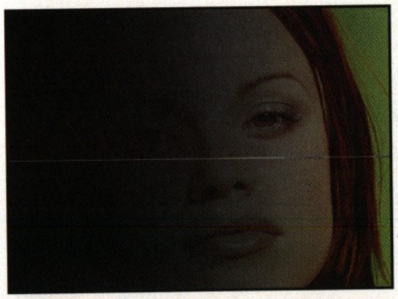
9 To finish off add a new layer, and with a small brush, carefully paint out the eyes with white. Then with a very small brush, paint along the edge of the lower lids. Set the layer to Soft Light to bring the eyes to life.

Part 3: A stylised finish

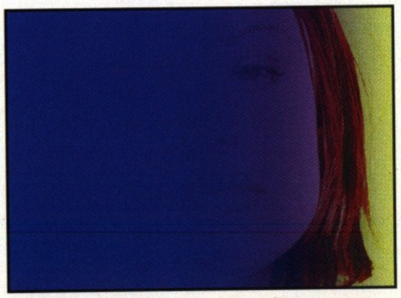
Now we'll try to achieve a more stylised look – one that wouldn't look out of place on the cover of a magazine like *i-D*...

Subtlety

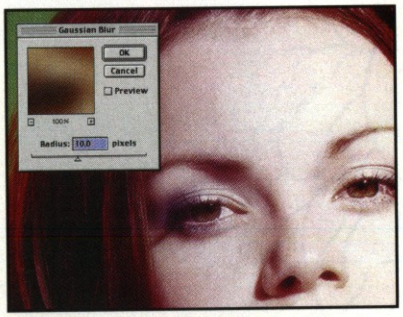
To achieve the most natural-looking image, keep the effects subtle by reducing the opacity of the layer. In this way, blending modes such as Colour Burn – which would usually create an unnatural look – can be used to great effect.



1 Start by opening the fashion.tif image from the CD. The first thing we'll change is the lighting. Add a layer and apply a linear gradient (black to white) horizontally across the entire canvas. Set this layer to Overlay – this will add shadows to the left and highlights to the right.

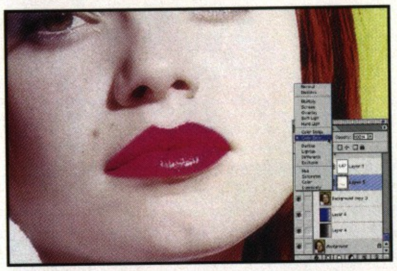


2 Add a new layer and apply another gradient. Use blue to white this time – we used 100 Cyan, 87 Magenta. Start the gradient just inside the hair to the left of the eye, and finish at the right edge of the canvas. Set this layer to Soft Light to change the colour of the light falling onto the face.

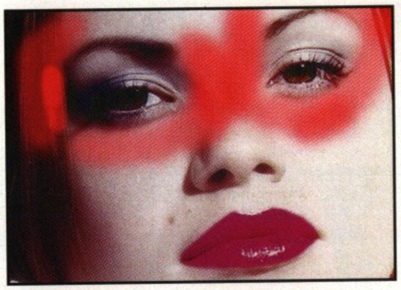


Radius: 10.0 pixels

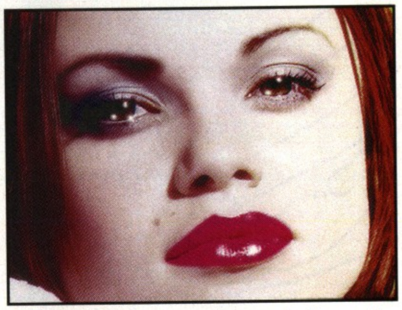
3 Duplicate the Background layer and place it above the others. Apply a Gaussian blur of 10 pixels, then set the layer to Screen at 75 per cent. This softens and lightens the image, and gives the skin a powdered effect.



4 Add a new layer. Select a shocking pink colour (92 Magenta, 12 Yellow) and paint carefully over the lips. Set the layer to Colour Burn and use a layer mask to tidy the edges. Then, in the Layer Blending options, Option-drag the white triangle of the underlying layer to 230/255 to let more of the highlight through.



5 Add a new layer. Using a medium brush, paint over the eyes and eyebrows in an oval shape with 100 per cent black. Set the layer to Overlay and add a layer mask to blend in the edges with a brush set to 50 per cent opacity. This adds eye make-up and increases the density of the eyes.



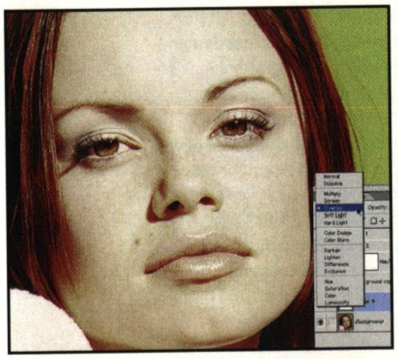
6 Finally we'll add a new layer, and with a small brush (about 30), dab in the eyes and lips to increase the highlights. Press 5 on your keyboard to switch to 50 per cent opacity in certain areas to soften the effect, especially in the lips.

Part 4: Moody black-and-white – or the CK look

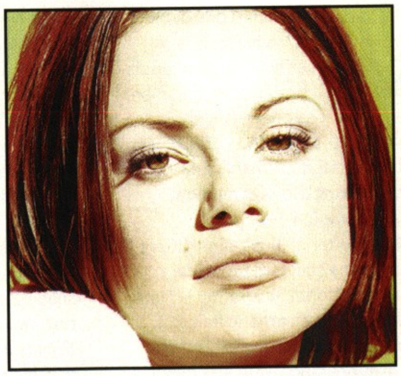
Finally we're going to desaturate the colours of our image, while retaining colour information for added depth...

Experiment

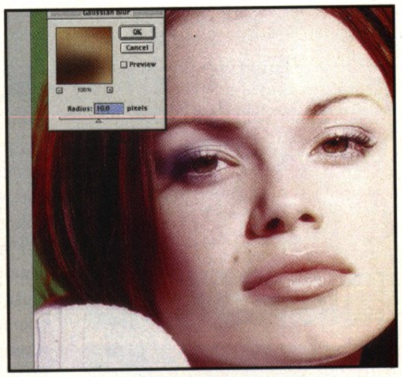
The best way to see how different effects work is by experimenting with the blending modes. Sometimes you can get great results from a blending mode that you wouldn't normally use.



1 With the fashion.tif file as your base image, add a new layer and fill it with white. Set the layer blending mode to Overlay at 50 per cent opacity. This is a neat way of lightening an image, while keeping good tonal values.



2 Duplicate the Background layer and place it above the last layer, then set the layer blending mode to Screen. This lightens the image further, but retains the contrast for the next step.



Radius: 10.0 pixels

3 Add a new Hue/Saturation Adjustment Layer. In the dialog box, click on the Colourise tick box and set the Hue to 250. This method gives you lots of control over colour and contrast. **ca**

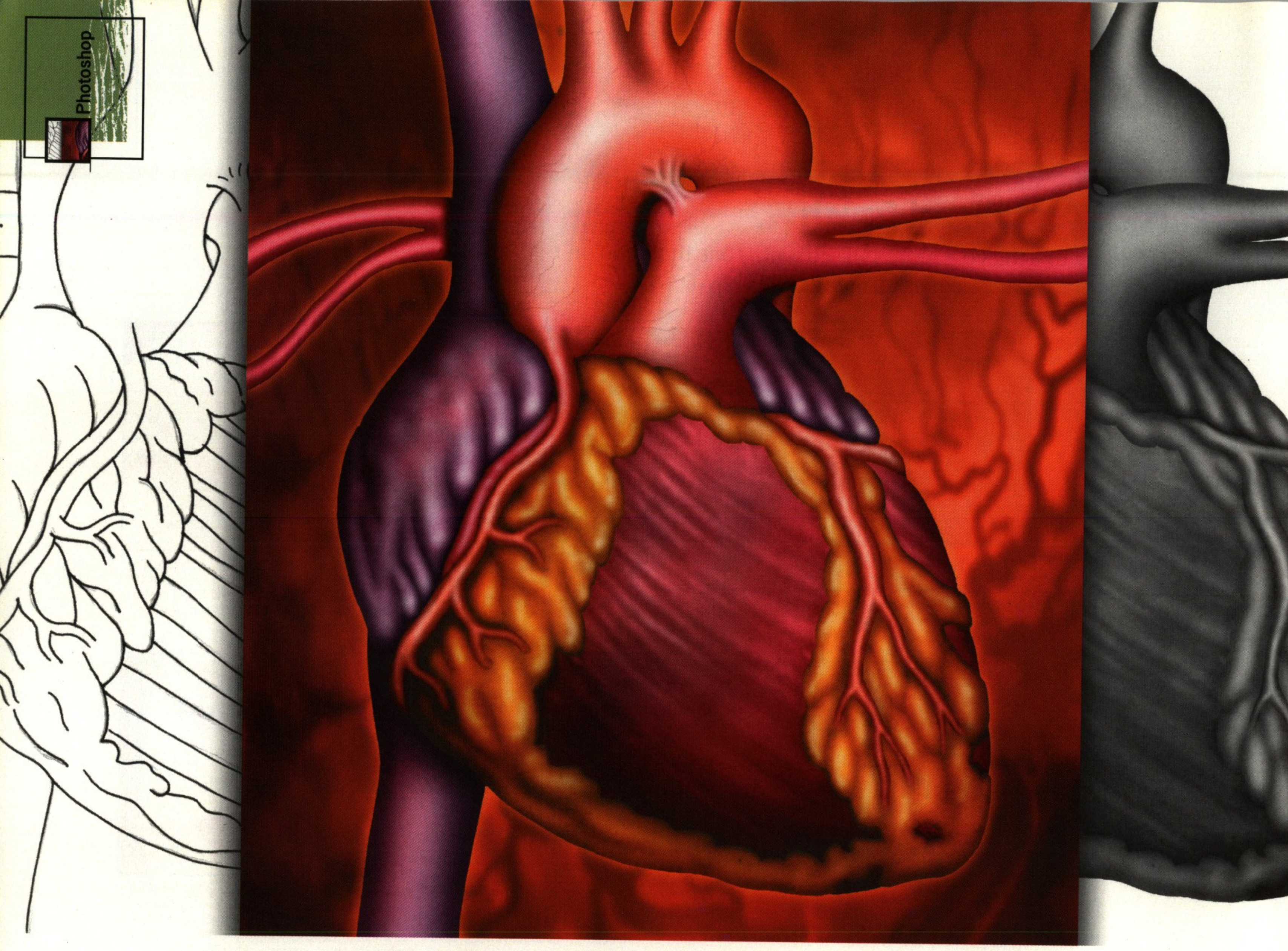


Illustration: Bill Fleming [e] CHAOS3D@aol.com

Airbrush techniques

The colourised pencil-shaded style is one of the most popular styles for medical illustration…

Welcome to part one of the airbrush masterclass. In this series of three tutorials, we'll be exploring a number of different professional airbrush illustration styles, from industrial design to medical illustration. In this first part, we're taking a look at medical editorial illustration.

Medical editorial illustration differs widely from the standard technical illustration. Editorial illustration is more colourful and has an artistic flair to it, whereas technical illustration is more plastic in appearance, with less detail. Basically, editorial illustration is more appealing, particularly to the consumer. With the vast number of medical topics in the news today, and the proliferation of medical media there is great demand for medical editorial illustration, making this a timely topic for our tutorial.

There are a number of different styles for this type of illustration, but one of the most popular is the colourised pencil-shaded style, which we're covering in this tutorial. This style resembles an airbrushed illustration but gives the general effect of pencil shading, so it's less polished and more textured and grainy. Fortunately *Photoshop* makes this relatively simple to achieve through its layer blends and filters. With these tools, we can add the imperfections found in traditional pencil-shaded illustration.

Expertise provided by Bill Fleming
[e] CHAOS3D@aol.com
[w] www.komodostudio.com

On the cover CD you'll find the source sketch for the illustration used in the tutorial. It's named Heart.psd in folder Tutorials\Photoshop\Airbrush techniques You'll need to load this file into *Photoshop* before beginning the tutorial.

Part 1: Painting in Photoshop

The first step is to create a detailed bump layer, which is then applied via a layer blend to the colour layer below

Using a stylus

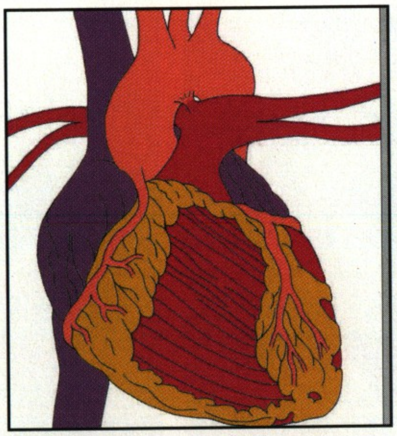
While it's possible to paint in *Photoshop* with a mouse, it's far better to use a stylus when trying to imitate the effect of a natural airbrush. A mouse can be tricky and the cost of stylus tablets has gone down dramatically over the last few years, with many priced under $150. If you really want the real-world experience, you can now get an LCD tablet where you paint directly on your *Photoshop* image. It doesn't get any better than that.

Painting methods

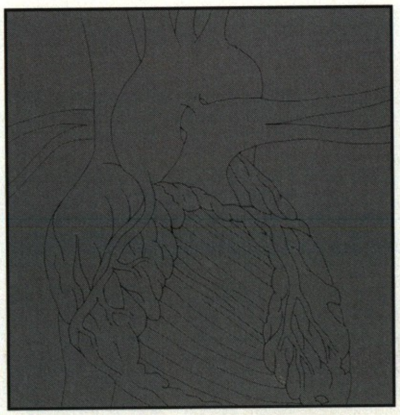
There are a number of ways you can paint in *Photoshop* but the most logical is to first create a detailed bump layer, which is then applied via a layer blend to the colour layer below to add detail. This way you avoid the necessity of changing brush colours to create highlights.

Burn and Dodge

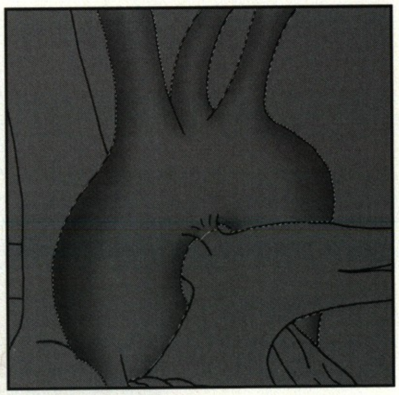
The easiest way of adding depth to an illustration is with the Burn and Dodge tools. These darken or lighten the colour, making them ideal for adding shadowing and highlights. Of course, if you are working on a colour, rather than grayscale layer, your colour will be 'burnt' by the Burn tool, which means it will be over-saturated. A grayscale bump layer is used for adding depth because gray darkens but doesn't 'burn'.



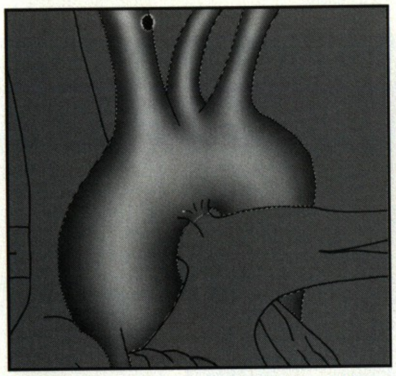
1 First load the Heart.psd image into *Photoshop*. This image represents a rough sketch of the heart, as well as the basic colour: we don't need any more than this because it's only a painting template. We'll be airbrushing the finer details.



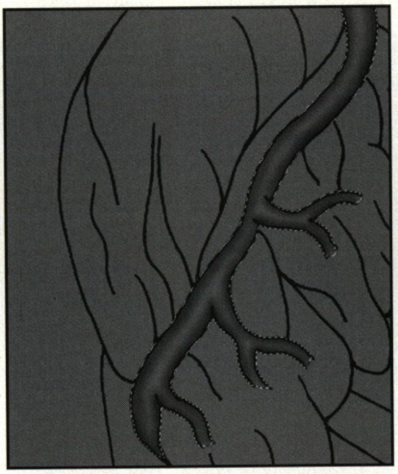
2 Next, add a new layer beneath the sketch layer called bump. Fill the layer with 50 per cent gray. We'll be adding the depth detail to this layer with the Burn and Dodge tools. Once completed, apply this layer to the colour layer below with a layer blend.



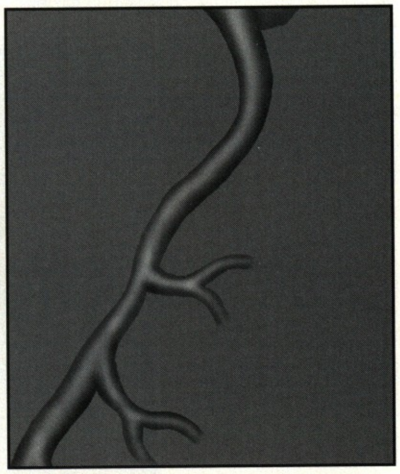
3 Start adding depth to the peach artery by first selecting it on the colour layer with the Magic Wand tool. Select the Burn tool with a Pressure of 20 per cent and a rather large brush. On the bump layer, shade the outside edges of the artery with multiple strokes of the brush. Then move on to the highlights.



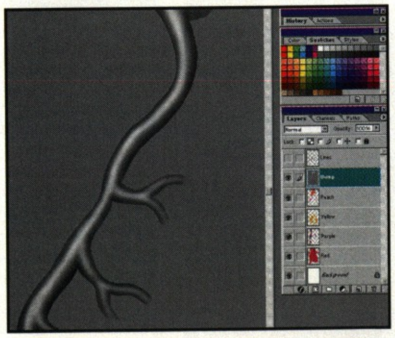
4 To paint the highlights, switch to the Dodge tool and paint strokes along the high points of the artery selection. To create a well-rounded artery, scale the brush size down several times as you make repeated strokes to lighten the colour. With the main artery completed, move on to the veins that extend off it and onto the heart tissue. The veins should already be selected.



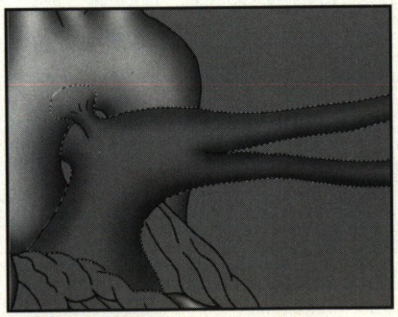
5 First select the Burn tool with a small brush size, and then add shadowing to the outer edges of the veins.



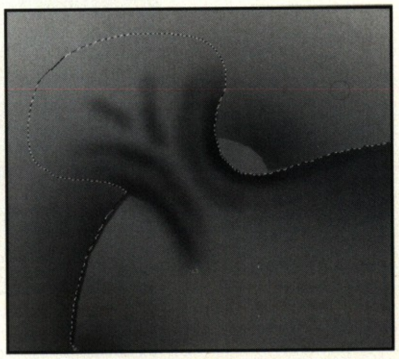
6 Now select the Dodge tool and paint light highlights along the top of the veins. To make the veins appear wet, add sharper highlights.



7 To add the sharper highlights, select a small brush and use repeated strokes to create a hot, white line along the peak of the veins. With the veins complete you can now move on to adding depth to the red artery.



8 First, select the red artery with the Magic Wand, and then hold the Shift key down and use the Lasso tool to add the tissue that binds the peach artery to the red artery to the selection. Add shadowing to the red artery using the Burn tool, just as you did with the peach artery.



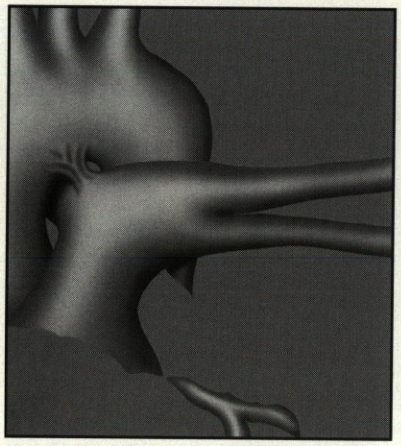
9 Zoom into the connecting tissue and use a small airbrush to create tendon-like fibers on the connecting tissue. Now you're ready to add the highlights.

Part 2: Highlights and shadow detail

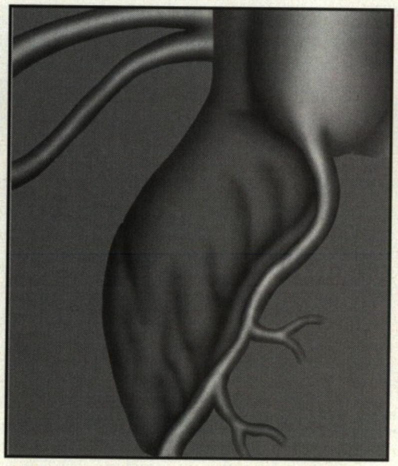
For this we use the Dodge tool to emphasise high points, and the Burn tool to create the illusion of depth

Layer blends

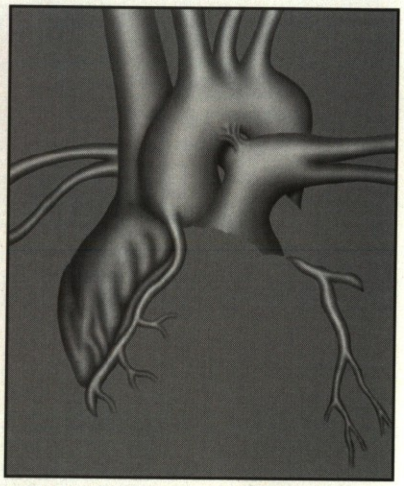
One distinct advantage *Photoshop* offers over traditional airbrush techniques is you can use layer blends to detail your images. With layer blends, you can do more than paint over a template: you can blend new colours that add to the impact of the image, such as saturating hotspots of the image with a Hard Light layer blend. These things take infinitely more effort with traditional techniques.



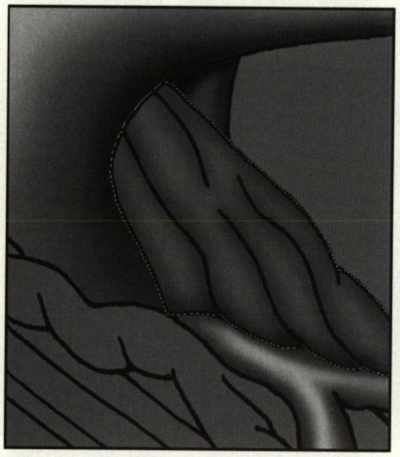
1 To create the highlights, select the Dodge tool and paint strokes along the high points of the artery and connecting tissue. This process is fairly redundant, because we'll be using the same techniques to add depth to the heart elements. The beauty of this method is that it only uses two tools.



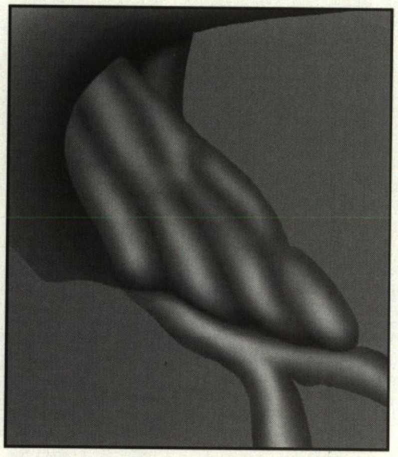
2 Now to tackle the purple artery. First, select the purple colour on the colour layer, then activate the sketch layer. Now select the Burn tool and paint the shadowed details on the bump layer, using the sketch layer as a template.



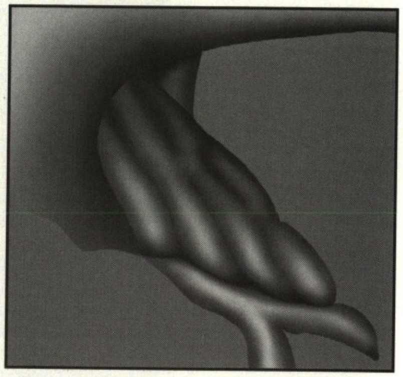
3 Next select the Dodge tool and paint highlights on the purple artery. Then move to the purple tissue on the right side of the heart, under the red artery.



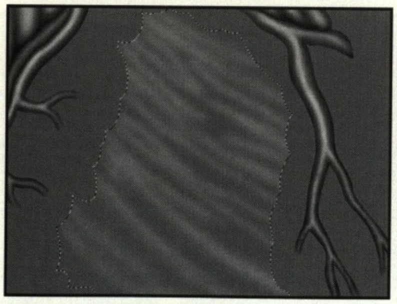
4 First add the shadow detail with the Burn tool – this is the easiest way of adding depth.



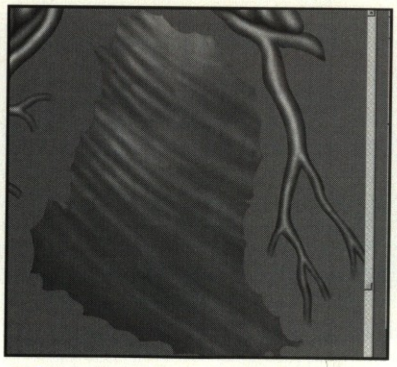
5 Then run the Dodge tool along the areas which catch the light.



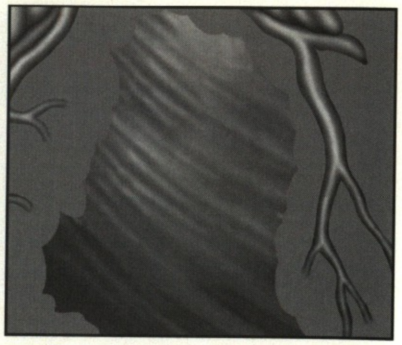
6 To create more depth on the tissue, use the Burn tool to darken the top of the tissue, just under the red artery, and then along the right edge of the tissue. The tissue now has more 3D depth. Next we'll be painting the muscle striations of the actual heart.



7 The heart muscle striations are the most interesting detail of the illustration. To create the striations, first select the red colour on the colour layer, then select them using the Dodge tool and paint diagonal lines to represent the ridges of the heart muscle. You can follow the sketch layer as a guide or just wing it.



8 Next select the Burn tool and paint the shadowed depth of the striations. The heart muscle is now taking shape, though it still lacks any real depth.



9 To add depth, select a large brush size and use the Burn tool to darken the underside of the heart. This creates the illusion of shadowed depth. Speaking of adding depth, let's move on to the yellow, lumpy tissue that surrounds the heart.

Part 3: Pencil shading

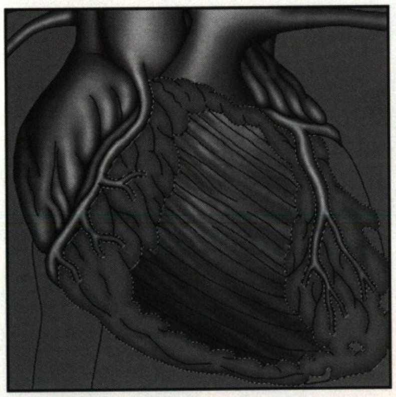
The bump layer is looking great, but it doesn't have that pencil illustration shading appeal that we're after...

Digital photos

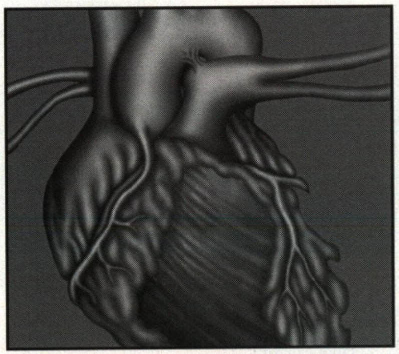
One quick technique for adding classic flaws and texture to your airbrush illustrations is to use digital photographs of natural textures such as rust, metals and woods, as layer blends to your bump layer. First desaturate the layer, and then apply an Overlay layer blend to apply the details to your illustration. Tweaking the Layer Opacity helps to achieve precise results. Digital airbrushing makes it possible to 'cheat' the process by taking advantage of the resources used with traditional airbrushing.

Editing details

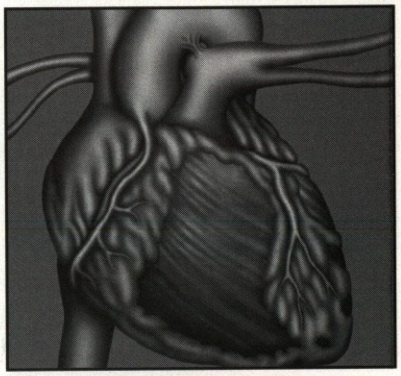
For the best results and fastest editing, you should always add your details on layers so they can be easily modified. *Photoshop* has a suite of powerful and flexible layer blends that make it simple to add specific details to your image, without the sacrifice of putting everything on the same layer. While adding more layers consumes memory and file space, it does give you the flexibility to go back and edit specific details with little effort.



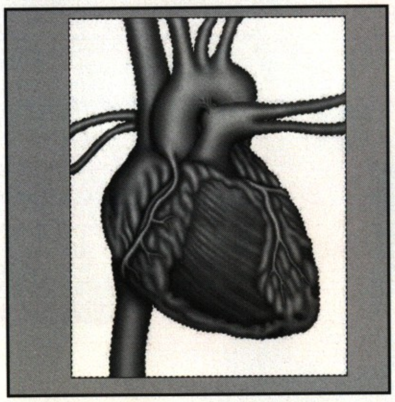
1 First, select the yellow colour on the colour layer, and then select the Burn tool and paint the shadowed accents on the bump layer, using the sketch layer as a guide.



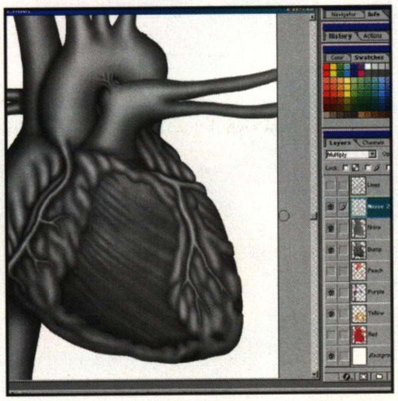
2 Select the Dodge tool and add highlights to the lumpy tissue. When you're finished it should resemble brain tissue. To accent the creases, select a very small airbrush set to RGB Black with a Pressure of 20 per cent, and then paint dark lines at the base of the creases.



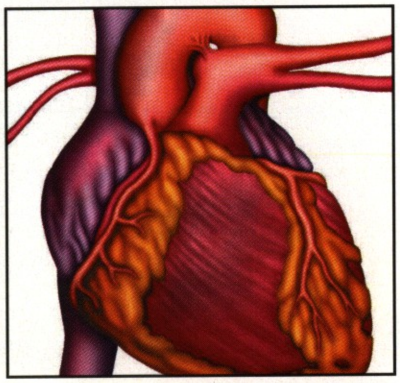
3 To complete the heart bump, paint the outer edge of the heart lower artery, making sure to add dark shadowing on the outer edge of the heart to add depth, and on the top of the lower artery, just under the heart to create a shadow.



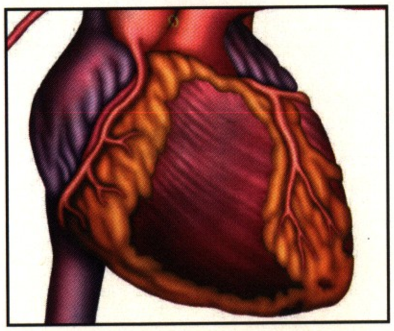
4 Since you'll be applying the bump layer to the colour layer below using a layer blend, you'll need to knock out the gray background so it won't taint the background colour. To do so, use the Magic Wand tool to select the background, and then smooth the selection with 5 pixels to clean up the outer edge. Then expand the selection 3 pixels to make a clean cut, and clear the selection.



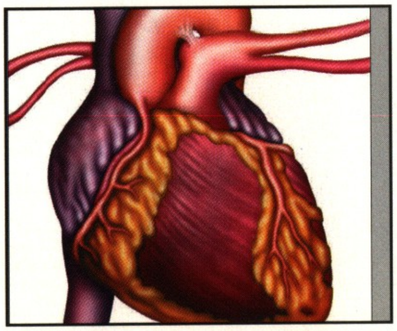
5 The bump layer is looking great, but it doesn't have that pencil illustration appeal that we're after. To create this effect, first select Layer Transparent on the bump layer, then add Gaussian noise with an Amount of 4 per cent. Add a new layer called 'noise' and set the Layer Blend to Multiply, with an Opacity of 60 per cent. Then render clouds with RGB 140, 140, 140 and RGB White.



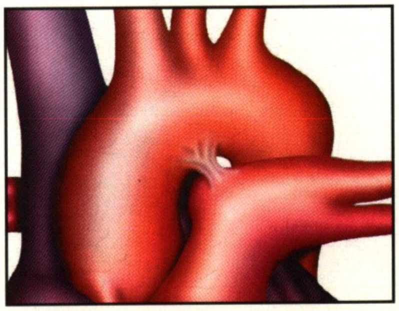
6 To colourise the heart, set the Bump Layer Blend to Luminosity, which applies its details to the colour layer below. Then, to add more character, select the colour layer and paint slight colour hue changes on the main heart elements, such as a little orange bleeding on the horizontal red artery and some lavender on the purple artery, not to mention a little light yellow around the interior of the yellow tissue.



7 To add 3D depth to the heart, create a new layer called 'darken' and then change the Layer Blend to Multiply. Now, set the Airbrush to RGB Black, with a Pressure of 20 per cent. Now select a very large brush and paint strokes on the underside of the heart and back side of the artery to the left. This adds shading to create depth.



8 To add more depth, apply specular highlights to the tops of the lumpy tissue surrounding the heart. To do this, create a new layer called highlights. Then set the Airbrush to RGB White and paint small hotspots on the tops of the ridges. Add some white splotches to the purple tissue and finally contour highlights on the main arteries.



9 As a final step, create a new layer called veins, and set the Layer Blend to Multiply. Select a very small brush with a Colour of RGB 177, 24, 64 and a Pressure of 15 per cent. Paint tiny veins on the main arteries, extending inward from the outer edge of the artery. Then Gaussian blur the layer with a radius of .5 pixels and you're finished with the heart illustration.

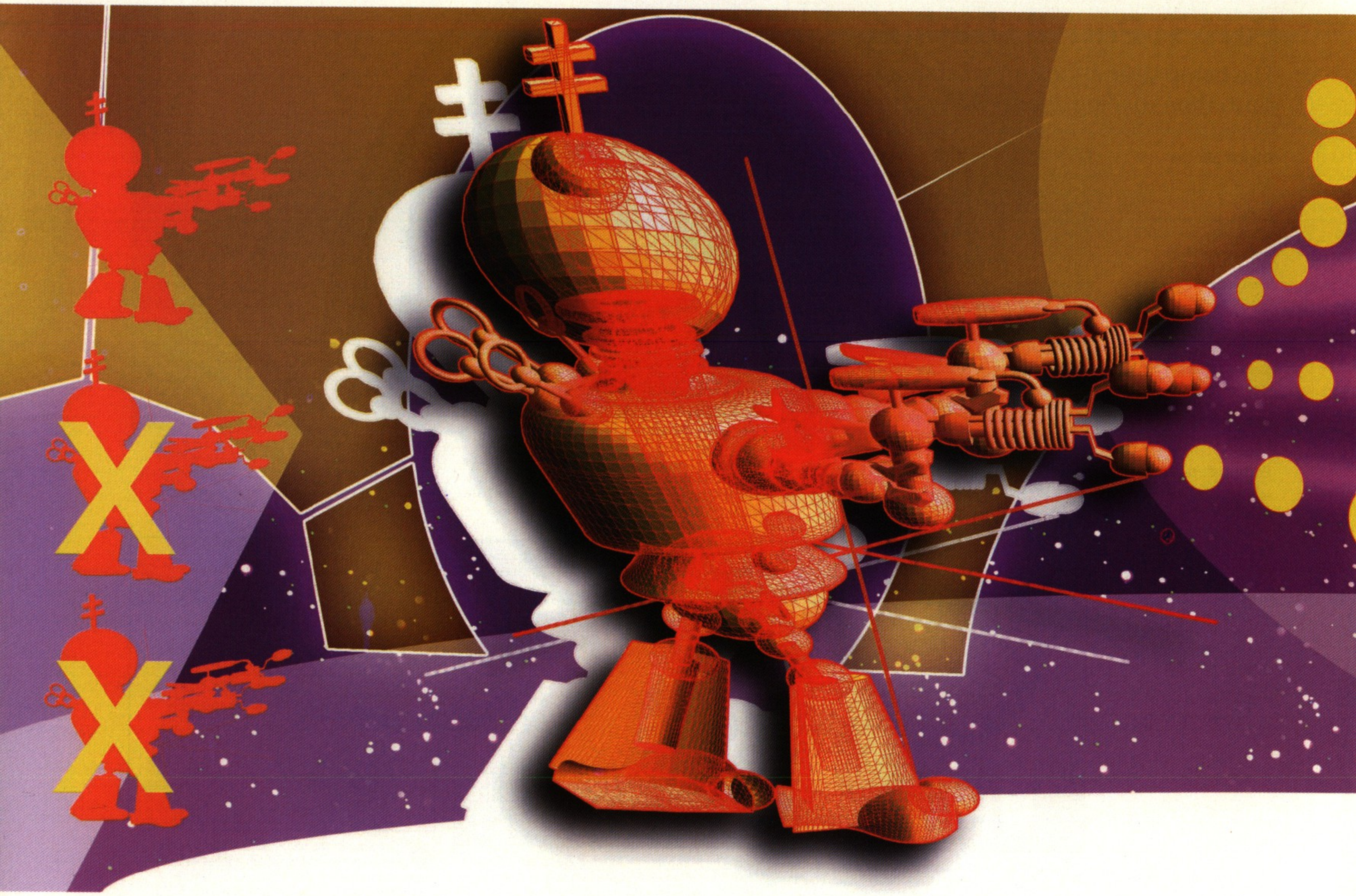
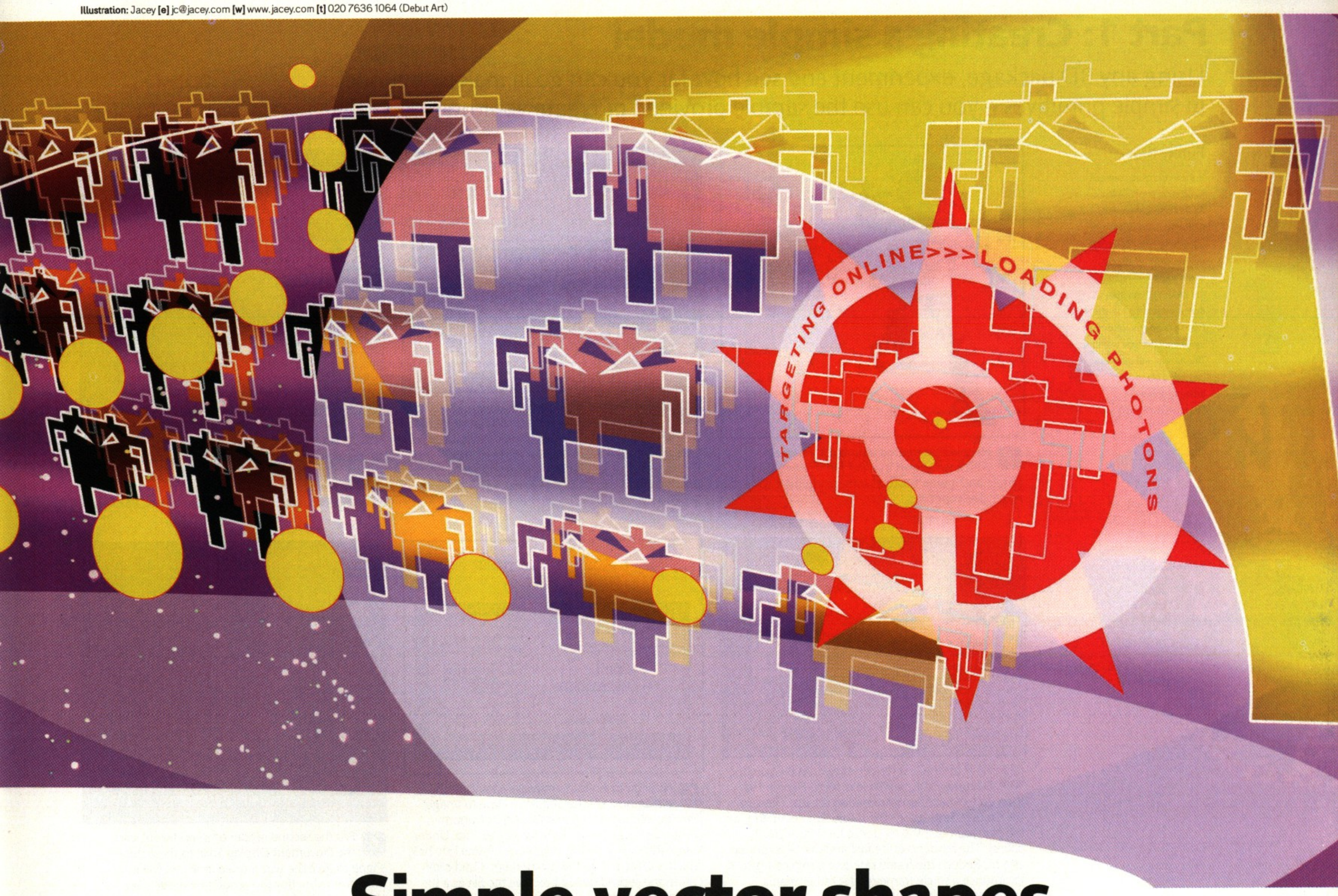


Illustration: Jacey **[e]** jc@jacey.com **[w]** www.jacey.com **[t]** 020 7636 1064 (Debut Art)



Simple vector shapes

Photoshop 6's new features make it easy to create flat vector shapes without the need to use *FreeHand* or *Illustrator*

Expertise provided by Jason Cook
[e] jc@jacey.com [t] 020 7636 1064
(Debut Art) [w] www.jacey.com

Files on disc

The tutorial files are on the coverdisc in the Tutorials\Photoshop\Simple vector shapes folder. There's also a demo version of *Poser 4* on the disc. You'll need *Poser 4* or any version capable of importing dxf files to follow this tutorial. Upgrade to *Poser 4.03* for £99, go to [w] www.unlimited.co.uk for info. If you're working on a PC, you need to open the *Poser* files using *Aladdin Expander* and have a full version of *Poser 4* installed.

As well as drawing vector shapes, we also take a look at the keylined illustration style that's so popular at the moment, and how to add simple wireframed renders to enhance the depth of the illustration.

During the last eighteen months or so there's been a move away from the full-on, all-singing all-dancing *Photoshop* layered look in commercial illustration and advertising. Simple, clean and fun is the new direction, but don't worry if you're a hardcore *Photoshop* user, you can still incorporate plenty of layers and make the illo look a bit more complex... but not too much.

We use *Poser 4* for this feature, which is very understated in terms of effect and speed. This tutorial assumes a certain proficiency in *Photoshop*, *Poser* and simple 3D modelling and the task of importing and exporting files.

We start by creating the wireframes then look at building up a background with the new Ellipse tools. Then it's on to the Custom Shop tool to create our army of space invaders very quickly without the loss of image quality that normally happens with a rasterised file.

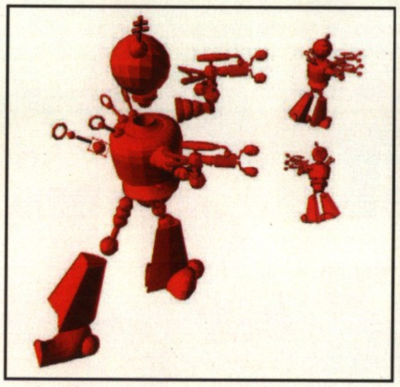
We'll then import the renders of the robot, and use the Warp Text tool to make simple, quick, distorted type. This tutorial can be used as a guide – you don't have to use or create the elements we have: incorporate your own ideas, colours or shapes at each stage to come up with a more individual illustration. Email me if you get stuck or if you'd like to comment on any aspect of the tutorial.

Part 1: Creating a simple model

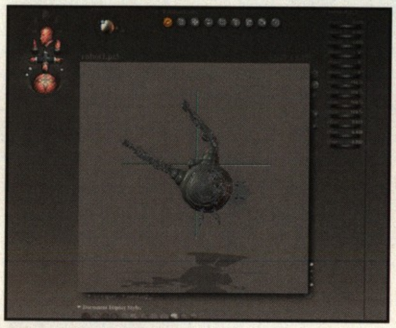
Using any 3D package, experiment and see how far you can go in making a model in simple primitives – you can use the sample provided or create your own

Funky illos

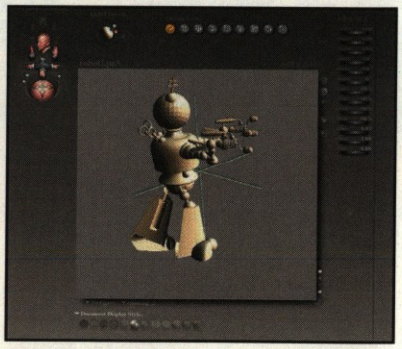
In the world of commercial illustration you have to work fast. As an illustrator you will have no problems using stock library images for your *Photoshop* masterpiece, so why not search out the numerous sites on the Web that have free downloadable dxf models to use. Need a lamp and table and haven't got the time to build one? This tutorial will show how you can turn a bland dxf into a funky little illustration.



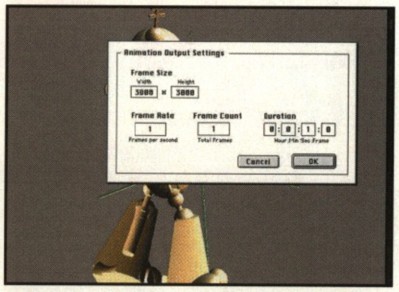
1 Here we've created a simple 3D model which we export as a dxf file. Try and keep it simple and it won't take as long to import into *Poser*. See robot.dxf



2 Import the dxf file into *Poser* under File>Import>dxf. Leave the settings at default. dxf files can be quite complex and it may take some time to calculate the model for *Poser* to import the file, especially if you have a low-spec system. Make the document size a square format, say 649x649. See robotpozer1.pz3



3 Now use the Editing tools and rotating sliders to position the model. Move the light controls to get a nice effect of shadows falling across the model. Don't worry about colours too much. Remove the ground shadows under Display>Groundshadows. See robotpozer2.pz3

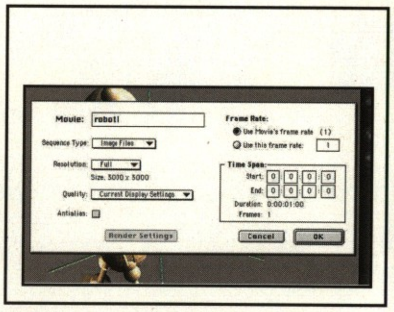


Animation Output Settings

Frame Size
Width 3000 × Height 3000

Frame Rate: 1 (Frames per second)
Frame Count: 1 (Total Frames)
Duration: 0:0:1:0 (Hour:Min:Sec:Frame)

4 Now for the first render of two. Make sure the Document Display Style is set to Flatshaded, then go to Animation>Animation set-up. Then, in the Output Settings set the frame size depending on the size you want the render to be (2000x2000 pixels). The render is quite fast and can be exported as a tif. Reduce the frame rate and frame count to 1 to produce a single frame render rather than a movie or sequence. Click OK.

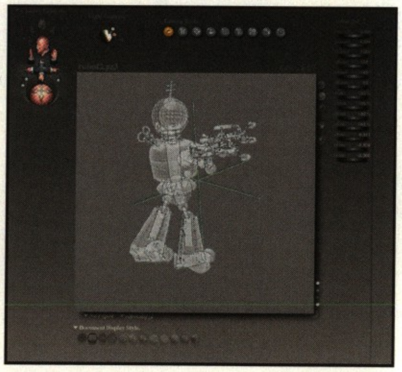


Movie: robot1
Sequence Type: Image Files
Resolution: Full
Size: 3000 x 3000
Quality: Current Display Settings
Antialias: ☐

Frame Rate:
● Use Movie's frame rate (1)
○ Use this frame rate: 1

Time Span:
Start: 0 : 0 : 0 : 0
End: 0 : 0 : 0 : 0
Duration: 0:00:01:00
Frames: 1

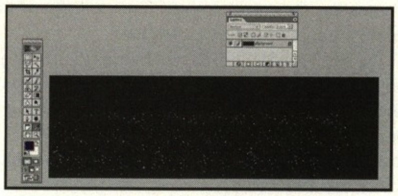
5 Now go to Animation>Make Movie. In the dialog box, set the Sequence Type to Image Files, Resolution to Full and Quality as Current Display Settings. Leave Antialias unchecked. Under Frame Rate, click on the Use Movies frame rate box, which is set to 1. Call the movie robot 1 and click OK. In the second dialog box save the file as a tif. See robotrender1.tif



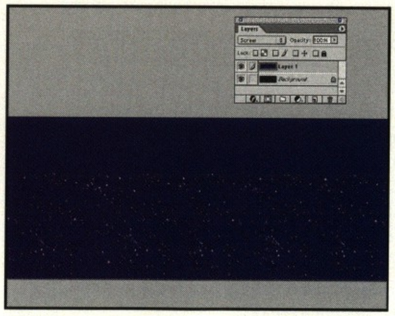
6 For the second render of a wireframe, click the Document Display Style to the outline shape to give the wireframed look and follow previous instructions to render the model. See robotrender2.tif

Part 2: Background and shape elements

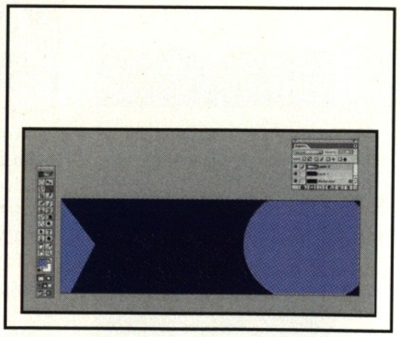
Making the background shapes using a variety of options, from the Lasso tool to the new Ellipse tool



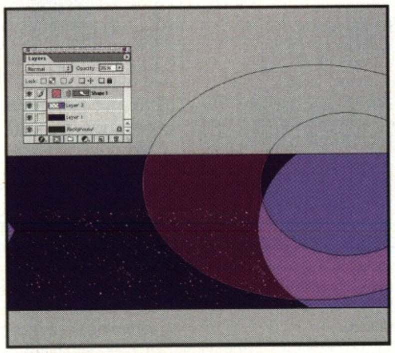
1 Open background1.psd. This star-filled canvas can be made in number of ways. You can create a black background and dab white spots on to it with the Brush tool or add small lens flares. Only do this to a small section of the canvas, then copy and paste the section. Make sure you add a large feather to the selection so that they blend well when pasting. Do this a number of times, then flatten the whole image. Add a slight Gaussian blur to soften the whole thing up.



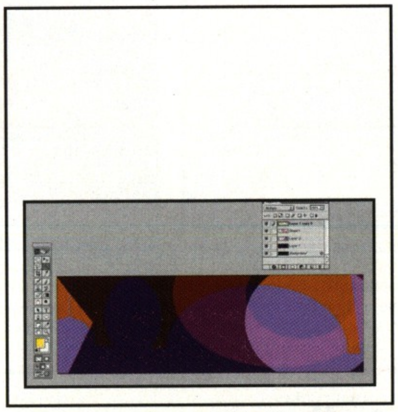
2 Now create a new layer and fill the whole area with a purple colour, say R75 G0 B73, then set the Blending mode in the Layer palette to Screen – this gives the whole canvas a nice purple effect.



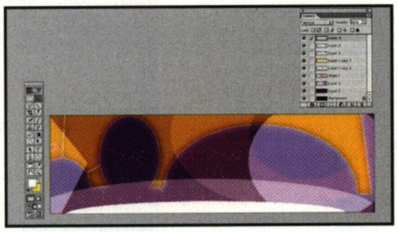
3 Create another new layer and use the Elliptical Marquee and Polygonal Lasso tools to create these shapes and fill with a colour R181 G154 B218.



4 Create another new layer and set the colour picker to R207 G168 B173. Now we will use the Ellipse tool to create the above shape by adding and subtracting. Drag and create an ellipse. Make sure the Options bar at the top left has the Add to Shape icon selected. Once you've done that, select the Subtract From Shape area from the Options bar and use the tool to subtract an area from the solid ellipse. Go to Layer>Rasterize shape.



5 Create a new layer and fill it with a yellow R255 G242 B0. Now using the Subtract Selection tools of the Lasso and Elliptical Marquees from the Option bar, delete areas of the yellow layer to create a similar layer as this image. Then set the Blend mode on the Layer palette to Multiply.



6 Now duplicate the layer in the Layer palette by dragging it down to the Duplicate Layer icon at the bottom. Now select the original layer you've just copied and set the Blend to Hardlight and Opacity to 60 per cent. Click the Lock Transparent Pixels button on and fill with white. Unclick the lock button and apply a Gaussian blur to get the same effect as above. Now go back to the copied yellow layer and select this layer by holding down the Option button on your keyboard and then clicking the layer in the Layer palette. Once that's selected, apply a stroke of about 6 pixels to a new layer. Add an additional two layers for the ground of the illustration which the robot stands on. Use the Ellipse tool or Marquee and make one of them 48 per cent.

Part 3: New features

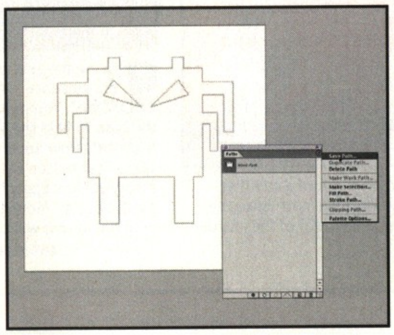
We are going to create a single custom shape and use it to provide us with an army of space invaders

10 per cent

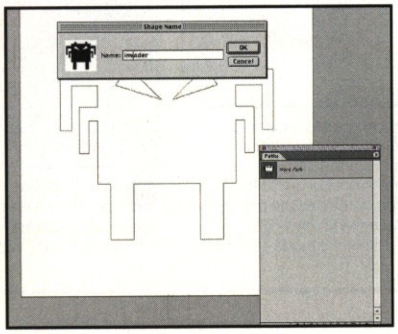
One of the funny, if not great, things about *Photoshop* is that there are about 10 different ways to do the same job or command. You will also find that out of all the years you have been, or will be, using the program, you might only use about 10 per cent of its cool features.

The quickest route

When creating shapes or objects, find the quickest route for yourself. Knowing what you need from the image will help, but don't spend ages using some great feature if you can do it in about half the commands with another feature.

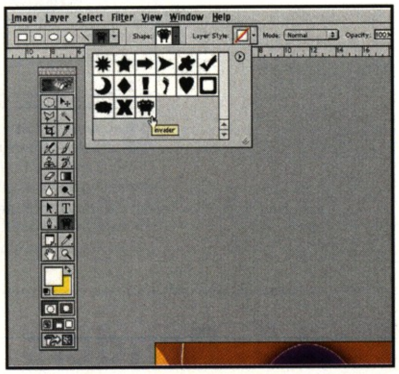


1 Create a new square document. Then using the Pent tool, draw the above shape, using Shift and guides if needed to help draw the straight lines. Then in the Paths palette, save the path by clicking the arrow and Save Path. See invader.psd

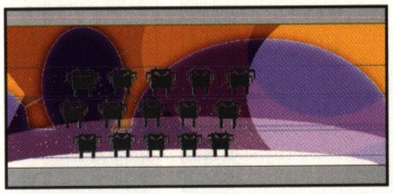


Name: invader

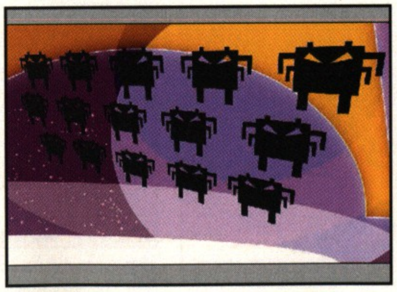
2 Then go to Edit>Define Custom Shape. Save it as 'invader'. Now the custom shape is saved so we can distort our illustration document without loss of image quality and multiply it as many times as we want very quickly.



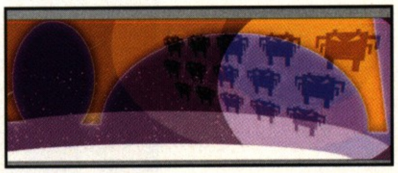
3 Go back to the original illustration, and in the Tool palette, select the Custom Shape tool. Then in the Option bar, select the invader shape.



4 Drag three guides from the top ruler and roughly space them as above. Then using the selected Custom Shape tool and invader shape, drag on the document to create the invaders. Holding Shift while dragging helps constrain the invaders to the right proportion. Also check that the Add Shape button on the Option bar is selected to keep adding the shapes. Make sure the colour picker is black so the invaders are filled black.



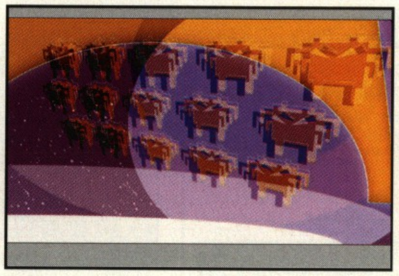
5 Now go to Edit>Tranform Path>Distort, and distort the space invaders like those above. Once that's done, press Return on your keyboard to set the shape. Then rasterize the layer.



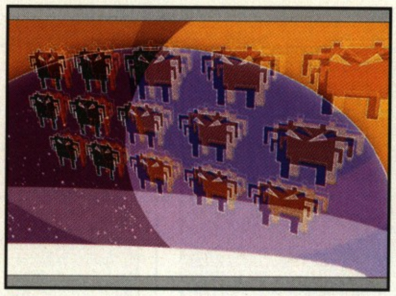
6 Now we are going to duplicate this layer a few times and add blends and strokes. So first make this layer an overlay blend. Make a selection of the shape and create a new layer. Stroke the selection at about 4 pixels in white and then deselect the image. Select the Move tool and move the image/layer a couple of pixels up and right, offsetting it with a filled invader layer. Then make the layer blend screen and set the Opacity setting to 49 per cent.

Changing trends

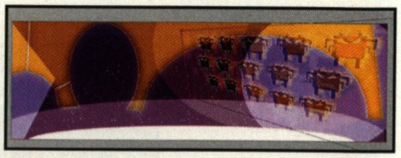
One of the most important aspects of being a commercial illustrator is knowing what the trends are or will be. One minute 3D techno/anime type will be all the rage, and the next you'll find everyone using dirty, flat 2D bitmaps. Even better, start your own. Keep pushing the style and it will pay off.



7 Now duplicate the original black invader layer and fill those shapes with R171 G160 B0. Make this layer blend overlay and offset the layer as above and then move the layer in the Layer palette below the black invader layer.



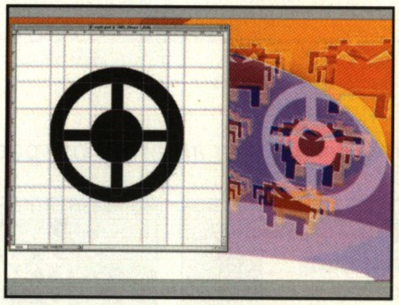
8 Go back to the black invader layer and make a selection of the shapes again and create a new layer. Stroke the selection with a thicker white, at say 5 pixels and then deselect.



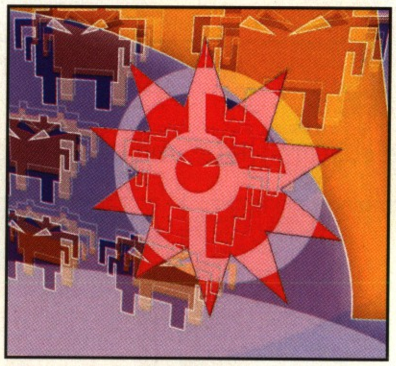
9 Again duplicate the black invader layer and drag this layer to below all the other invader layers in the Layer palette. Blend mode should be overlay and set Opacity to 19 per cent. Fill the shape white. Make sure the Move tool is selected and go to Edit>Transform>Distort. Distort the layer to make it larger behind the other invaders and press Return. Here we are distorting a raster image unlike the original, because the colour is so knocked back we don't need to worry too much about softening the edges of the shape.

Part 4: Adding details

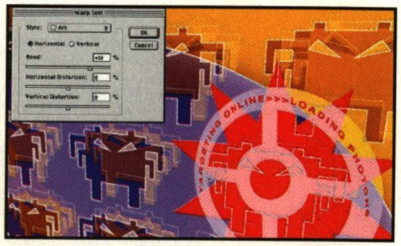
Now we are going to add some distorted text and two more vector shapes



1 Using the same procedure as you used to create the background shapes with the Elliptical tool and then a custom shape, create the above shape. You can use guides or a grid to place the circles. Then apply it to the illo as the top layer in the Palettes window. Make the shape bright yellow, distort it and then make the Blend mode Luminosity.



2 Use the preset custom shape of a star that comes with *Photoshop* and create it like the above, but drop the layer below two of the invader layers and make it red.



Warp Text

Style: Arc

● Horizontal ○ Vertical

Bend: +58 %

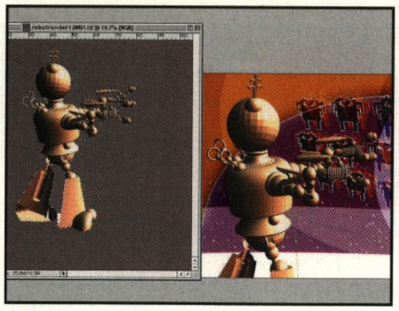
Horizontal Distortion: 0 %

Vertical Distortion: 0 %

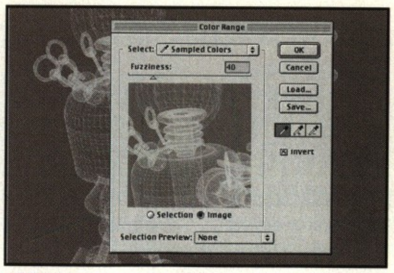
3 Using the Text tool, type, in any font you like, the sentence 'TARGET ONLINE>>>LOADING PHOTONS'. You may have to vary the point size of the type to fit in the laser sight when we distort the text next. Now apply the distortion by clicking the Warp Text button in the Option bar and select ARC for style. Now apply bend and distortion to fit in the sight. You can move the text when doing this just by dragging it so it will help you more when adjusting the distortion over the sight.

Part 5: Renders

In this section we get to use the renders we made of the robot earlier



1 Open robotrender1.tif, and go to Select>Load selection. This creates a selection around the robot. Copy and paste into the main document as a top layer.



Color Range

Select: Sampled Colors

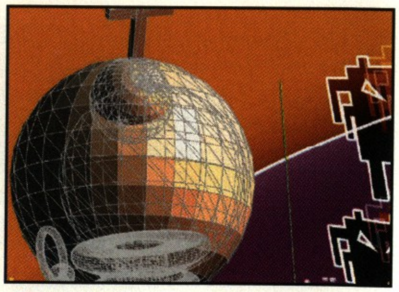
Fuzziness: 40

☒ Invert

○ Selection ● Image

Selection Preview: None

2 Open robotrender2.tif and go to Select>Colour change and select the background in the preview with the Eye dropper tool. Then click the Invert button. This will invert the selection from the background and just select the wireframe. Click OK and then copy and paste into the main document.



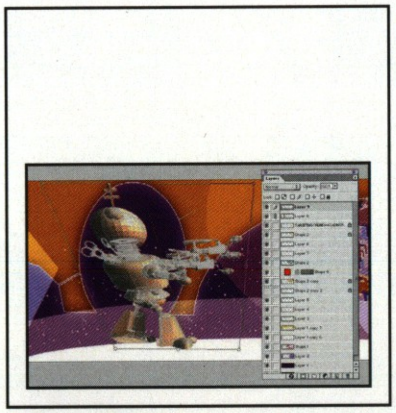
3 Now that the wireframed layer is above the robotrender1 layer, position the wireframed version exactly over it, matching the edges. You may need to zoom in to do this. Don't forget to use the Move tool.

Building trust

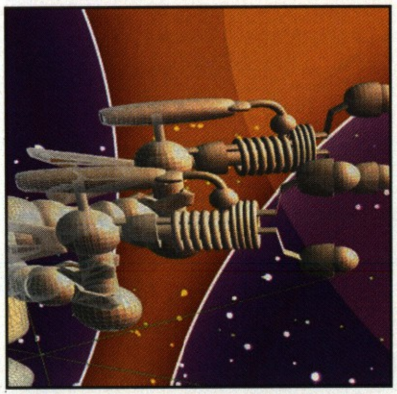
When illustrating, have fun. When it becomes a chore, try and pinpoint why you feel less enthusiastic... Is it your style or a naff client? You may find that you're able to push your regular clients and get them to experiment more. Tell them what you want to do – not what they want. If they're already using you, you must be doing something right. Building trust with a client is as just important as delivering on time.

Expand and experiment

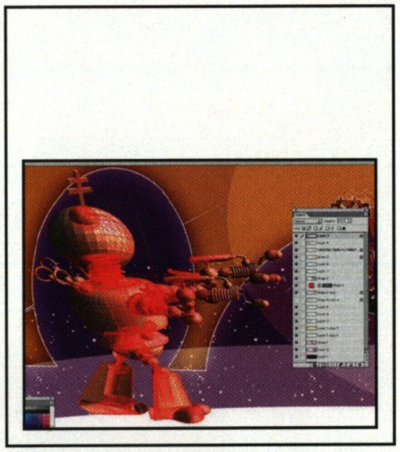
Hopefully, you're going through this tutorial and experimenting with your own ideas, or incorporating them as you go. Expand on the steps and give it your own look. If you have time to do a tutorial, then you have time to experiment, so make the most of it! This free time can almost disappear when you're working on a live job.



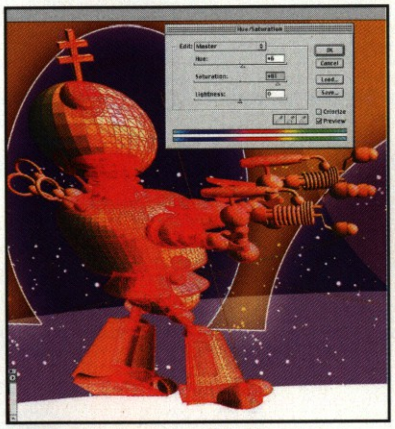
4 Once that's done, link the two robot renders together in the Layers palette and use Edit>Transform>Distort to place and reshape the layers as in the above image. Once you've done that, click OK and unlink them both.



5 Now using the Eraser tool, erase the wireframed layer around the robot's guns and its back. This will let more of the render below show through and add a bit of depth. Use a soft edge brush so the wireframe looks like it's blending into the render below.

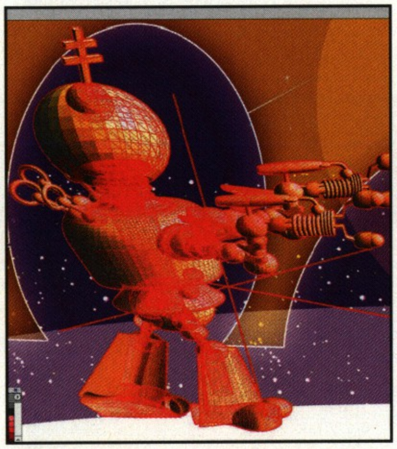


6 In the Layers palette, lock the Transparent Layers pixel button on the wireframed layer and fill with a red colour.

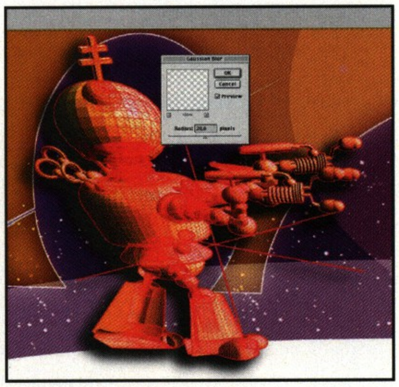


Edit: Master
Hue: +6
Saturation: +81
Lightness: 0
☐ Colorize
☑ Preview

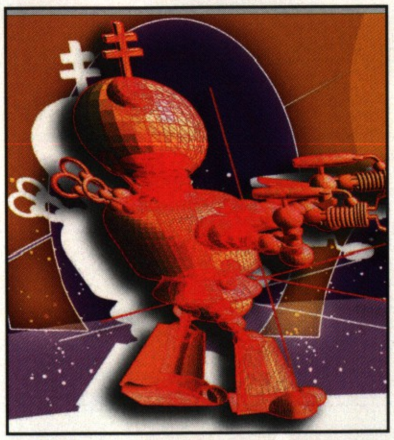
7 Change the colour of the rendered robot below the wireframed layer. Use Image>Adjust>Hue/Saturation and bump up the Saturation to +81 and the Hue to about +6.



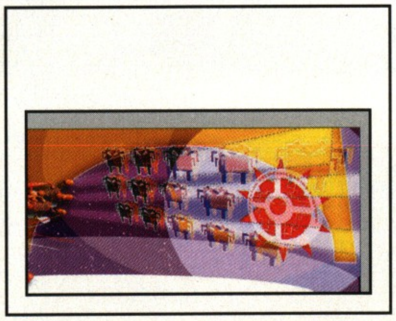
8 Now staying with the same layer, select the whole rendered robot shape as in previous methods and stroke it at about 3 pixels in red.



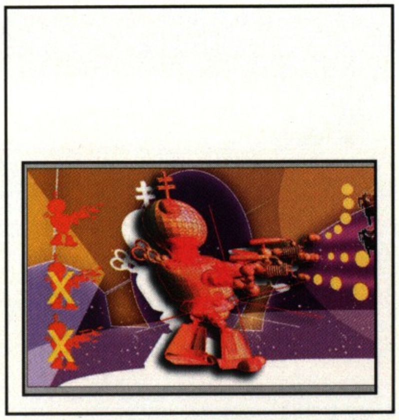
9 Now deselect the layer and duplicate it, then click on the orignal layer you have just duplicated – this should be below the new one. Select the whole render again and fill it in with black, then apply the Gaussian blur and set the layer to Hardlight to create a soft drop shadow.



10 Repeat the previous stage, but don't blur, and fill with white. Make sure this is in place under the drop shadow and offset it quite a bit.



11 Now create a new layer at the top of the Layer palette to create the soft laser beams coming from the robot's guns. To do this, select the Polygonal Lasso and set the feather in the Option bar to about 25 pixels. Draw three laser beams and use Shift on your keyboard or make sure the Add Selection button is selected on the Option bar at the top. Fill in with white and then set the Blending mode to Overlay and the Opacity to 70 per cent.



12 With all the commands and new features we have gone through, add the additional elements like the circle laser beams and the robot's 'lives' icons to finish off the illustration. ca

Illustration: Simon Danaher **[e]** simon.danaher@ntlworld.com

3D compositing

Use *Photoshop* to combine multi-pass renders from 3D applications and create great visualisations fast

In recent times, *Photoshop* has found a powerful ally in desktop 3D programs. 3D graphics applications like *LightWave* and *3ds max* provide a synergistic link with *Photoshop* enabling digital artists to create images faster than ever before.

In this tutorial we'll look at how you can use *Photoshop* with a 3D graphics application to produce a photorealistic product for advertising or visualisation. We'll create a perfume bottle, along with scenery and light, then texture it and render out the image. However because things have to look perfect, we'll harness the power of *Photoshop* to get precisely the right look, and by outputting the image in multiple passes we can speed up the process of adjusting and tweaking the image. Because the product is made of transparent materials (the perfume and the glass) rendering using raytracing can take a while, which is why we use *Photoshop* to make adjustments rather than continuously re-rendering.

The techniques shown here are applicable to *LightWave*, *Cinema 4D*, *ElectricImage* and *3ds max* because they all have multipass output, although some of the methods differ across programs.

The files for this tutorial are on the cover CD in the Tutorials\Photoshop\3D compositing folder. *Cinema 4D XL7* for PC/Mac costs £1295, details from [w] www.hisoft.co.uk. We've also supplied some models that you can open in any 3D application.

Expertise provided by Simon Danaher
[e] simon.danaher@ntlworld.com

Part 1: Creating the bottle

The first step is to make the objects in the scene, either by importing vector art or using the Spline drawing tools in your 3D program

X=0

Use grid snapping to ensure the start and end point lie exactly at X=0.

Main object

The resulting mesh is quite dense – because it's the main object, however, it's better to make it smooth enough for close scrutiny.

SubPatches

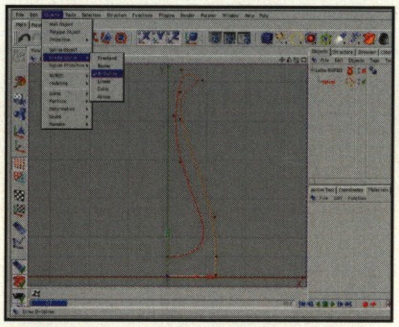
In *LightWave*, you could create the bottle using SubPatches, or create it directly by lathing a curve. In *3ds max* you can use NURBS and then convert to polygons.

Alternatively...

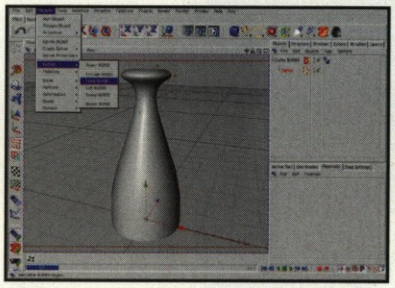
We have also created a meniscus by splitting off a copy of the top row of polygons, selecting the bottom row of points and merging them to form a disc. Inner Extrude then enables us to radially subdivide it. It's then rejoined to the main object.

No 3D app?

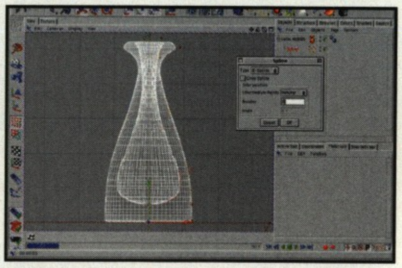
If you haven't got a 3D application or aren't interested in multipass rendering, you can skip straight to the *Photoshop* section of this tutorial on page 36. The files are on the CD so you can load them up and go...



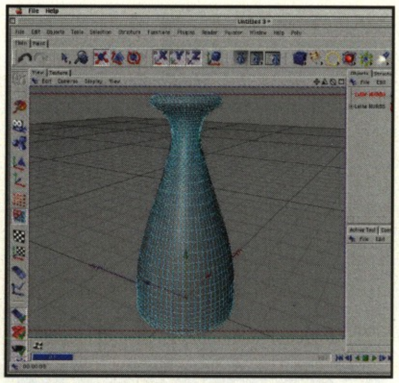
1 Begin by creating the bottle. You can do this using any of the Spline drawing tools in the Front (XY) view, but you may find that the B-Spline curves are easiest to control for this particular job. To create sharp corners, use two points closely spaced or Béziers if you prefer.



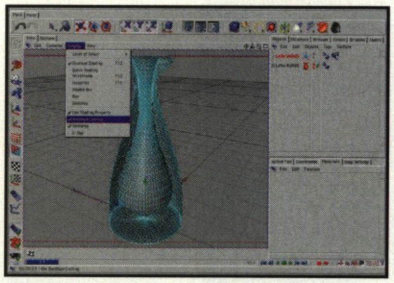
2 If this was a real product, you could import vector art of the exact profile if it was available, or load up a drawing in the background and trace it. In *Cinema 4D*, rotate the curve by placing it in a LatheNURBS object (Objects>NURBS menu) in the Object manager. In Point Edit mode (Return Key) you can adjust the points to fine-tune the shape of the bottle.



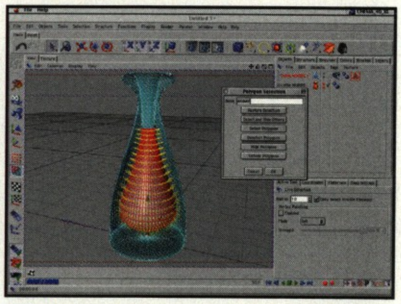
3 Change to Wireframe mode (View window's Display menu) in the Side or Front view, and then open the Spline object's Properties (double-click the icon in the Object manager) and change to Natural Interpolation (from the default Adaptive). This creates a mesh with more regularly spaced polys, ensuring smooth edges. Also open the LatheNURBS and change the Rotational Subdivisions to 60.



4 This object can be duplicated and hidden (Ctrl/Command–drag to copy, use the dots in the Object manager to hide) then the duplicate converted to polygons by pressing the 'c' key.



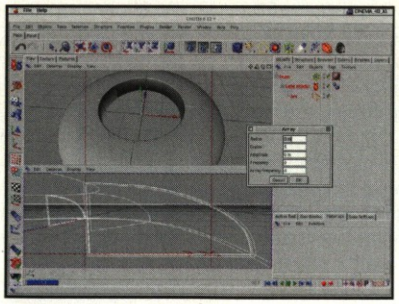
5 Next we need to assign a new surface that acts as the liquid. Note that in some apps like *LightWave*, you need to create an extra layer of polygons to get the correct result with refraction. How do we select those inner polygons, though? There's a simple way in *Cinema 4D*. First, in Poly mode (Return key twice) invert the Normals (Structure menu) then turn on Backface Culling for the view to see the object 'inside out'.



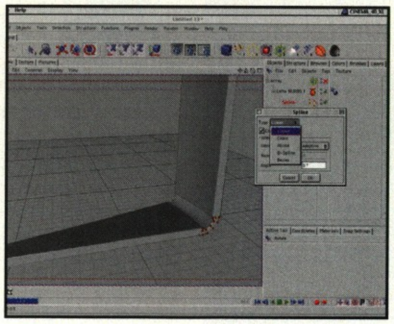
6 Use the Live Selection tool and make sure the Select Only Visible Elements option is active in the Active Tool tab. Now you can paint-select what will be the liquid surface. Choose Selection>Set Selection to add a surface selection tag to the object. Open it and name it something: this can be used to restrict textures to it later. This object is saved as Bottle1.dxf on the CD.

Part 2: Setting the scene

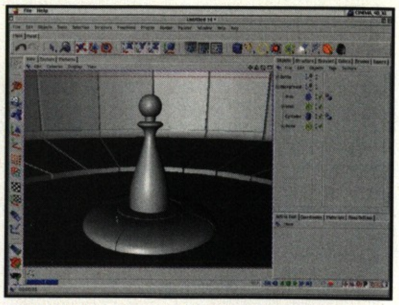
Now to create the other scene objects using simple shapes – you can work in separate files if you wish, then copy and paste them to the same file



1 First we'll add a backdrop to the scene, which consists of some radial sections which will be textured with a metallic material. At the centre is a dome–shaped platform created by lathing an arc object and using *Cinema 4D*'s Array object (distance set to 0m) to make three copies.



2 The walls were created in a similar way by lathing a linear curve. Start by using a Bézier curve and click to add points without dragging to change it to Linear from the Curve options, then create an Array.



3 A simple disc object is added that will become a back–lit floor between the dome and the wall object. Assemble the pieces together in a single scene including the bottle. You can work in separate files to create each piece if you wish, then copy and paste them into the same file when you're ready.

Part 3: Adding lights and textures

The main lighting for the scene comes from a single point light placed behind the bottle, but first we'll add some lights to subtly illuminate the background

Low res

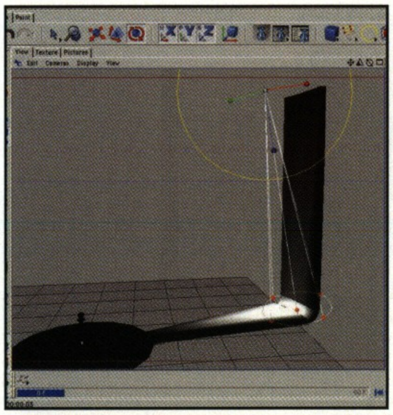
Set the level of detail in the scene to Low (View Window> Display>Level Of Detail menu) to keep the display fast. Enable Use Render LOD so that object appears at full resolution when test rendering.

Reflective indices

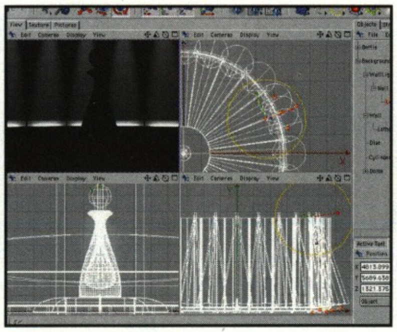
The two materials have different refractive indices because they are different substances. The liquid is assumed to be ethyl-alchohol based which has an RI of 1.361, while glass can be between 1.5 and 1.9.

Object buffers

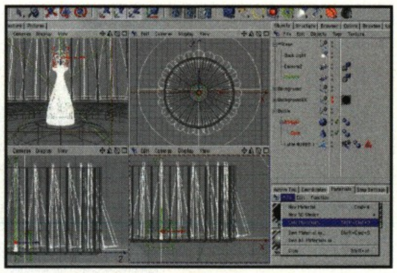
In *Cinema 4D* and *LightWave* you can create object buffers that will save Alpha channels for assigned objects. It doesn't work the way we want for transparent objects though, which is why we've used the material approach.



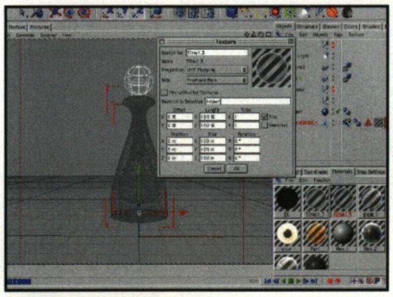
1 Turn off the wall array, then create a spotlight and move it up to the wall so it points down and towards it. Enable its Hard Shadows option (double-click the Light icon).



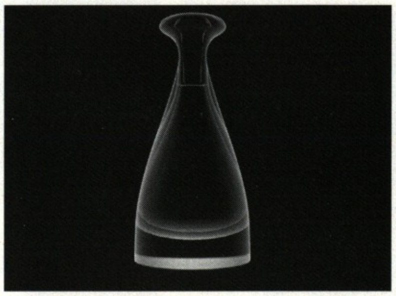
2 Create another array object with the same settings as for the wall. If you add the light directly to the Array you won't get the result you think. First add a Null object – make sure it is at 0, 0, 0 then drag the light into it in the Object manager. Now drag the Null into the Array to create the ring of lights and adjust the angle of the light. All the others will update because they are instances.



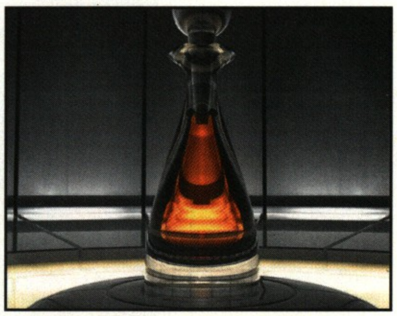
3 Now we'll import the textures for the scene. From the Material manager Choose File>Load Materials and navigate to the file BottleScene.c4d from the CD. A number of these textures are the actual scene materials and others are used to create separate render passes. You also need to copy the folder 'Tex' from the CD to the *Cinema 4D XL 7* folder on your hard drive so that *Cinema* will find the textures referenced in the materials. (If there is already a Tex folder there, copy the contents of the CD Tex folder into the one on your hard drive.)



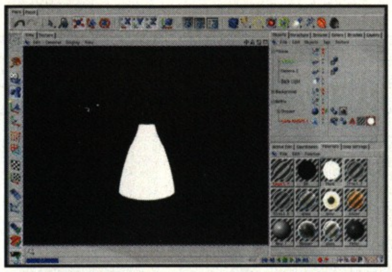
4 Make groups for your scene object. Create a Null and rename it Background, and drag all the objects except the bottle into it. Make another group for the bottle, and another for the Scene objects (lights and camera when you create them). The first thing to do is apply the TFres1.7 and Tfres1.3 materials to the glass of the bottle and the BK material to the stopper. However in the TFres1.3 Texture options, enter the name of the selection set created for the liquid of the bottle.



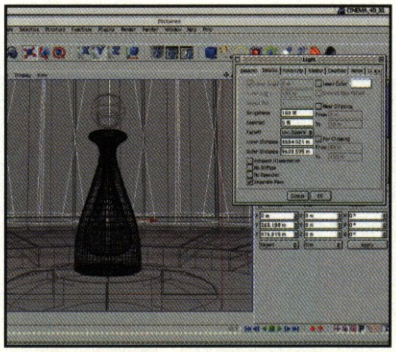
5 Set the view for the scene and create a Camera (Scene>Camera). From Render>Render Settings, set Antialiasing to Best, and the resolution and format (you can render to the screen for these steps or use the supplied image files) which is 1:1 for this image. Render to the Picture Viewer (If you take a screengrab before it finishes, you'll avoid the demo's watermark. Expand the Picture Viewer window to full screen and set the display to 100 per cent). This image is TFres.tif on the CD.



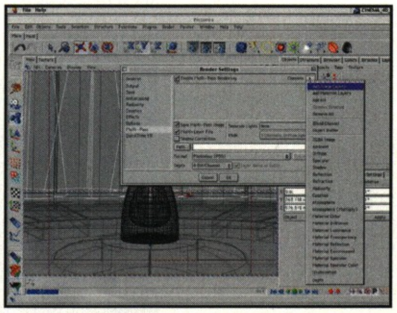
6 Next apply the rest of the materials: Metal to the background elements, Glow to the disc (set to Flat projection, rotate 90 degrees in pitch and use Fit to Object from the Texture menu: this is the luminous floor material) and Stopper to the stopper. Replace the TFres materials with Amber and Glass. You can drag them directly on to the previous materials to replace them. Render again and copy the image. This image is Render1.Jpg on the CD.



7 Now we'll create some masks. This time turn off the Background Objects and the Stopper, and apply the Mask material to the bottle and render. We need a properly refracted mask for the liquid in the bottle, so apply the material Clear1.7 to the bottle and restrict the Mask material to the Amber selection (double-click the Material icon in Object manager and type in the name of the selection). Render again. Using the same principles, make masks for the other parts of the scene. The files on the cover CD are Bottle_A.tif, Liquid_A.tif, Disc_A.tif and Stopper_A.tif.



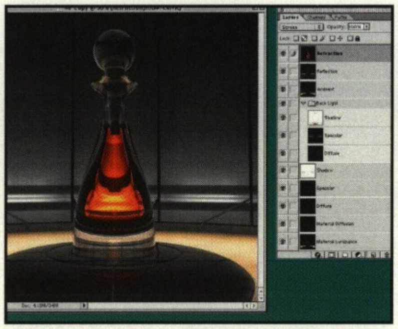
8 The purpose of these materials is to provide layers and masks that we can composite in *Photoshop* to get the best possible results without test rendering scores of times. Instead we only have to render a handful of images. To set up the main Multipass render, first open the Back light Properties and enable the Separate Pass option in the Details tab.



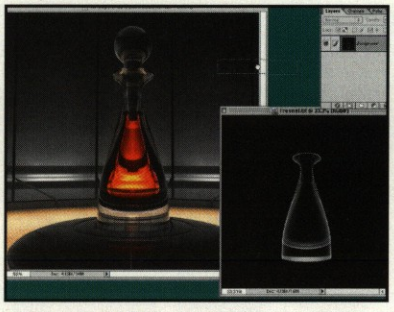
9 In *Cinema* we can use the Multiple Pass rendering feature to render the main Beauty.tif image but also save out the different passes such as reflection, specular and diffuse as a *Photoshop* layered file. In the Render settings enable Multiple Passes, then from the Channel pop-up, choose Add Image Layers. Delete the layers you don't need such as Radiosity, Caustics and Atmosphere. Also choose Selected from the Light Passes pop-up to enable separate layers for the back light.

Part 4: Compositing the renders

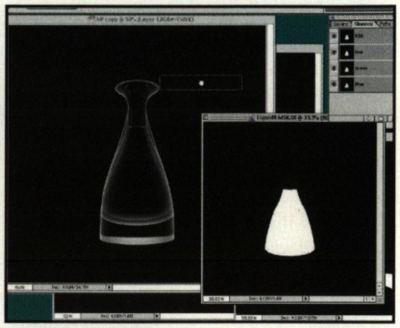
Once the main passes are complete, we can assemble them in *Photoshop*. The separate layers give us a lot of flexibility, controlling the look of the image



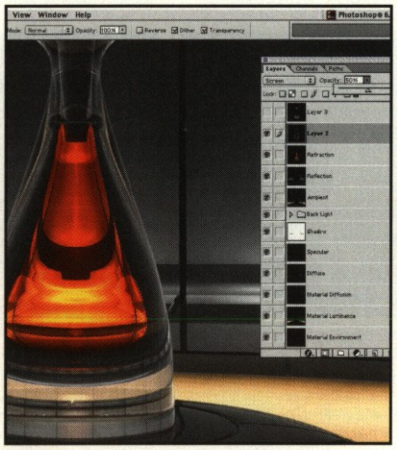
1 This final render PSD file can be found on the CD called MP.psd. Open this in *Photoshop*. As you can see, it is a layered file, each layer containing portions of the full image. However, in *Cinema 4D*, some layers are blended using the Add mode rather than Screen which *Photoshop* layers don't have, so it may look different to the render in *Cinema 4D*.



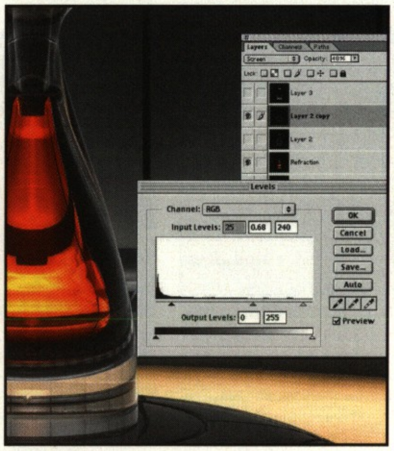
2 Next open the transparent fresnel renders. These were created to give some illumination to the edges of the glass. While not 100 per cent accurate, they make the glass stand out against the background. With both files open, Shift-drag the fresnel layer into the MP.psd file. To make sure the files line up, use your own (if you have your own copy of *Cinema 4D*) or use the images supplied.



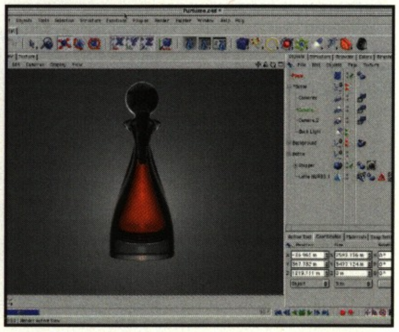
3 Next open the Masks files. In each, switch to the Channels palette and drag any of the channels to the MP file. Note that in *Photoshop*, if you drag a layer like this it comes in as a layer. If you drag a channel it comes in as a channel. We want the masks as channels so we can load them as selections.



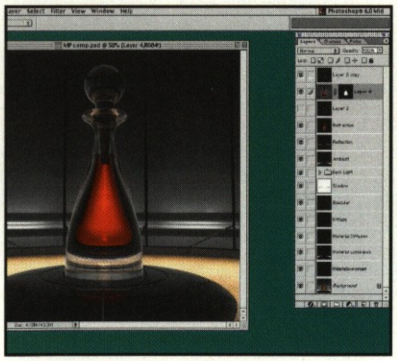
4 Change the fresnel layer to Screen mode and move it to the top of the layer stack. Notice how it accents the curves of the bottle and accentuates them. However it's too bright, so lower the layer's Opacity to about 50 per cent.



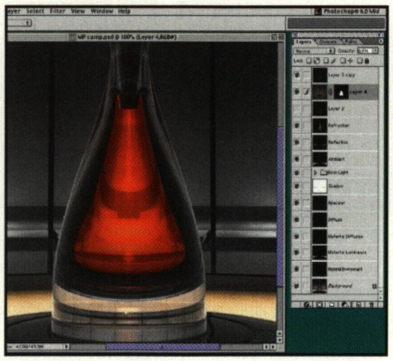
5 It's still not right, so duplicate and hide the layer (for safety) then apply levels to the original. Decrease the Gamma and pull up the Black Point slider. This has the effect of thinning the fresnel edge for a sharper, subtler effect.



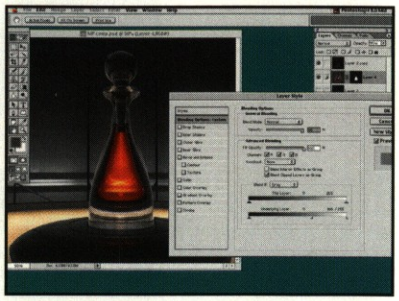
6 The problem with this multipass file is that there's no way to separate the different layers behind transparent objects because there isn't any reflection and transparency. This means we need to be careful, but *Photoshop* lets us create the look we need, we just have to select the right bits of the image. The main problem that needs tackling first is the liquid which just looks too messy. So go back in to *Cinema*, turn off the Background and add a simple plane behind the bottle and re-render a single image (not an MP file).



7 This is opened in *Photoshop* and dragged into the MP file at the top of the stack, below the fresnel layer. The Liquid_A channel (which is the mask we created in step 16, and saved as Liquid_A.tif is loaded as a selection) and applied as a layer mask for the layer.



8 This has the desired effect of reducing the clutter of reflections and refraction in the liquid. But it would be nice to get some the glow back, and to do this we have two options: apply it in by hand, or adjust the Layer Opacity. The latter reintroduces too much dark clutter.



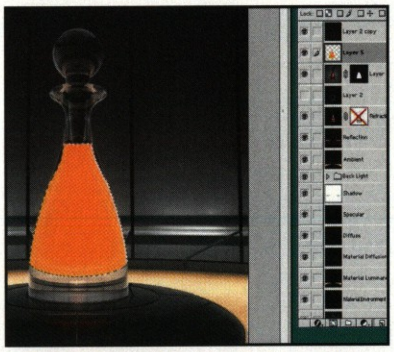
9 Increase the Opacity to about 95 per cent to let some of the underlying image through. Now we want to keep the amount of black the same but increase the lighter colour's levels. To do this, use the Advanced Blending Modes option in the Layer Styles dialog. Double-click the layer, then Option-Drag the Underlying Layer white slider. This splits it to feather the result. Gradually you'll see more of the lightness showing through.

Part 5: Adding transmission effects

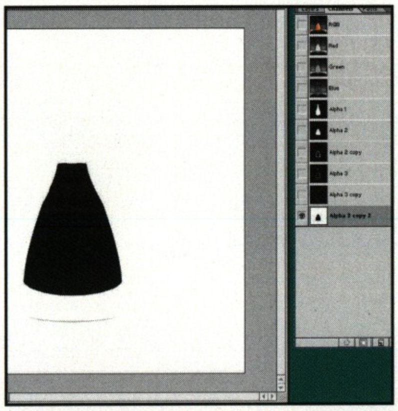
Rather than start numerous expensive test renders to get the right effect, use *Photoshop* to introduce some light transmission effects to the liquid in the bottle

Liquid_A channel

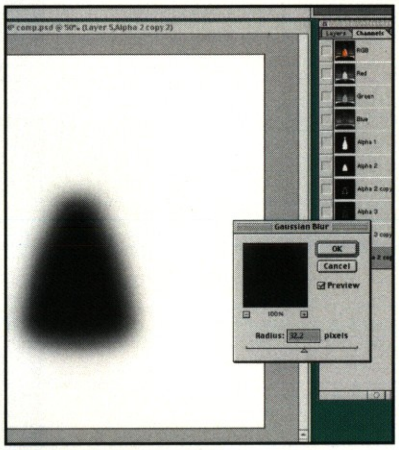
Remember the Liquid_A channel is the mask of the inner portion of the bottle as seen refracted by the outer portion.



1 Next, add some transmission effects to the render. Because the bottle was back lit, the light should illuminate the volume of the liquid more. It'll also make the product look more appealing and help it stand out even better from the environment. Create a new layer and load the Liquid_A channel as a selection. Pick a glowing orange colour and fill the selection with it.



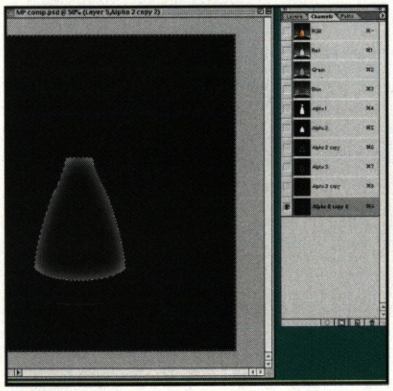
2 What we want to do is lighten the edges of the liquid, not the centre, to make it look as though the light is being focused around the edges. A mask is needed to control the placement of the colour. Duplicate the Liquid_A channel and invert it.



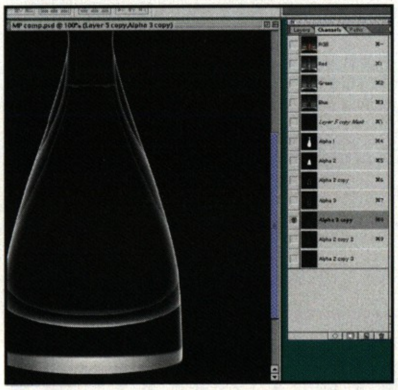
Gaussian Blur

Radius: 32.2 pixels

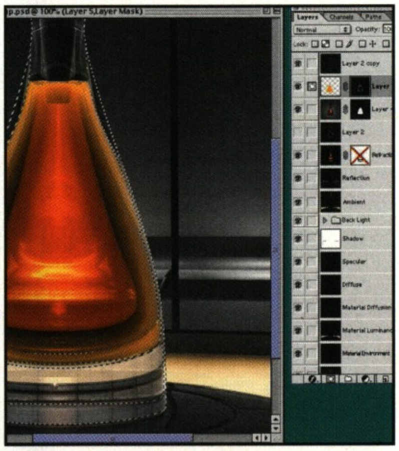
3 Apply a large amount of Gaussian blur to the inverted channel. Make sure none of the selections are active when doing this.



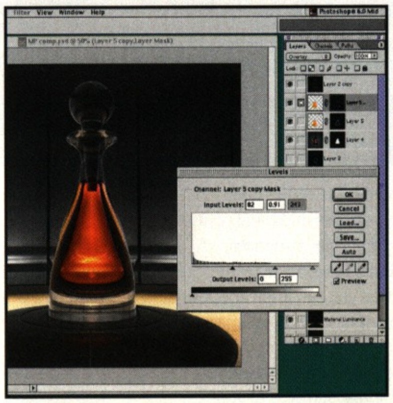
4 Load the original (uninverted) Liquid_A channel as a selection, invert it, and fill the blurred channel with black. Note that in *Photoshop*, Ctrl/Command–i inverts the pixel values while Shift–Ctrl–i (Shift–Command–i on a Mac) inverts a selection. It's the latter you want.



5 Load this new channel as a selection and apply it as a layer mask to the orange layer. This isn't the final result however, we need to further refine the mask. This time we need to shrink its edges slightly, and we can use the Fresnel channel for this. Duplicate it and use Levels to thin it out.



6 Load this channel as a selection, then highlight the orange layer's mask in Layers and fill it with black using the selection.



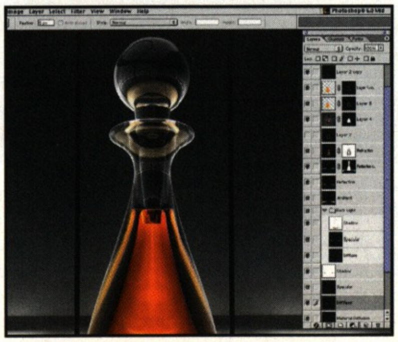
Levels

Channel: Layer 5 copy Mask

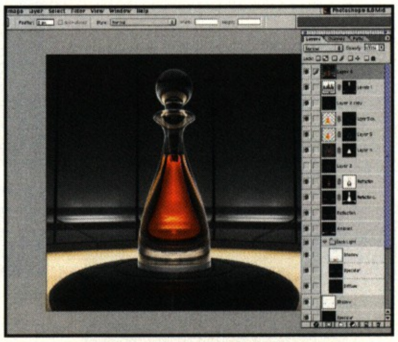
Input Levels: 82 0.91 243

Output Levels: 0 255

7 Change the Layer Mode to Overlay then duplicate the layer to intensify the effect. You can adjust the width of the transmission effect by applying some levels to the orange layer masks.



8 Finally the background is adjusted. The back panels are lightened by applying Levels to the Diffuse layers (including the one in the Back Light folder). You could easily do more to them but they need to be simple so as not to detract from the product. Here we have also duplicated the reflection layer to brighten them up a little.



9 If you want, you can add a small amount of depth blurring to the image. To do this, use Select All, then Ctrl/Command–Shift copy to copy all layers, then paste it as a new layer. Using the masks we had, we first created a gradient in a channel then subtracted the bottle and stopper. This was used as a selection with which to blur the background. ca

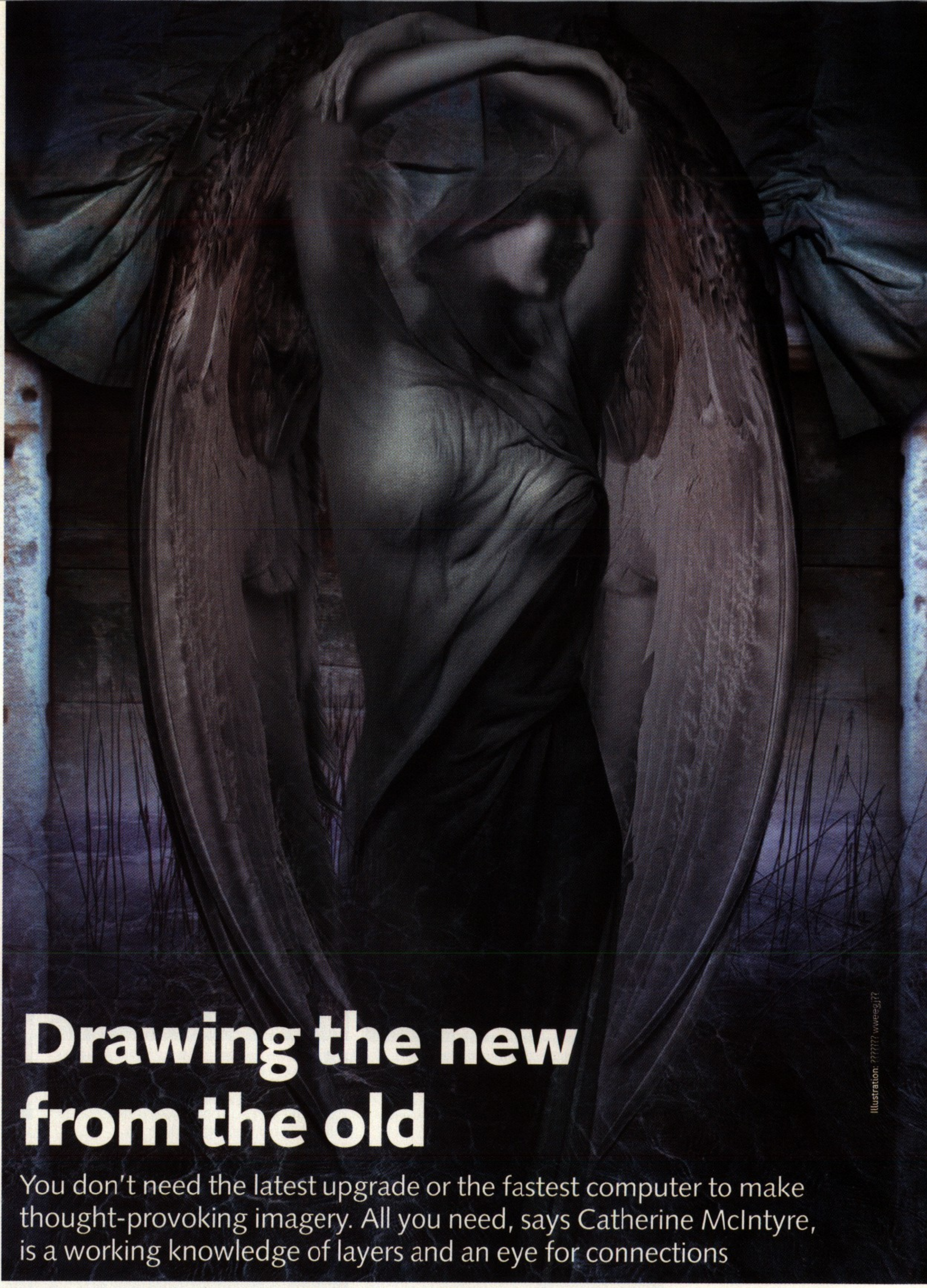


Illustration: Catherine McIntyre [e] cmci@appleonline.net

Illustration: ??????? wweegj??

Drawing the new from the old

You don't need the latest upgrade or the fastest computer to make thought-provoking imagery. All you need, says Catherine McIntyre, is a working knowledge of layers and an eye for connections

Computers can have an odd effect on people. Just because you're pressing keys instead of holding a brush, you can forget that you're still making images.

It's all too easy to get hung up on the technicalities. If you're busy worrying about the filters and the masks, you're not thinking about the important stuff.

Simply get to know the basics, then forget you're using them: just concentrate on the real business of picture-making. The traditional skills of composition, drawing, perspective and tonal control are still the important structural considerations. Develop an instinct for them, and then you can think about what you really want to say with an image.

Are you conveying a mood? Telling a story? Arranging texture and colour? These are the real subjects of your picture, and your prime considerations.

This tutorial explains step-by-step how to make the image shown, *Water*, which is a personal piece from a project about the four elements.

We show how an image builds up gradually, growing visually as you add new elements and conceptually as the meaning becomes more complex.

The overall atmosphere may be dictated by the subject or brief; what you use to suggest this atmosphere is up to you. If you don't have too many preconceived ideas, the end result can be far from expected. Have fun!

Expertise provided by Catherine McIntyre
[e] cmci@appleonline.net [t] 01575 574465
[w] http://members.madasafish.com/~cmci

Catherine's monograph book, *Deliquescence*, is published by Pohlmann Press, California, and is available at the Amazon Website
[w] www.amazon.co.uk

Files on disc

The tutorial files are on your coverdisc, in the Tutorials\Photoshop\Drawing the new from the old folder.

Part 1: Creating the background

Laying down a background, even if most of it should disappear by the time you've finished, gives a basic texture for the next layers to interact with

Element sources

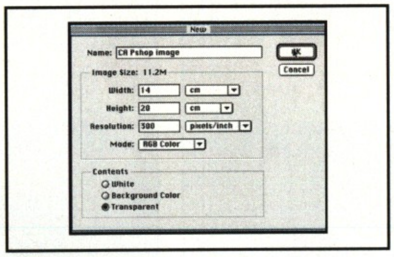
Draped figure & arms – studio shots; Bronica SP 4x4 medium format camera, 80mm standard lens, Agfapan 100 b+w film; scanned Dainippon Screen colour drum scanner

Drapes, door – natural light, Venice; Nikon F401 camera, 28-80 zoom lens, Kodacolour Gold 400ASA film; scanned Nikon Coolscan

Water, water+reeds – natural light, Angus, Scotland; Canon Powershot S20 digital camera

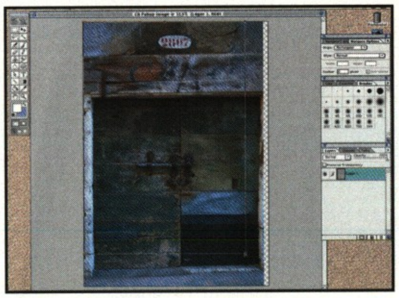
Wings – natural light; Canon Powershot S20 digital camera

Portrait – junk shop postcard; scanned UMAX Astra 1200S scanner

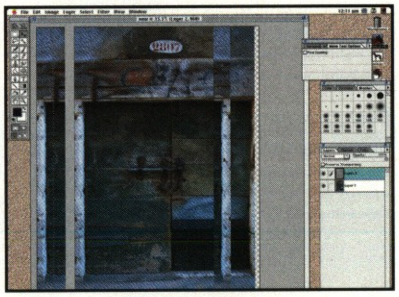


Name: CR Pshop image
Image Size: 11.2M
Width: 14 cm
Height: 20 cm
Resolution: 300 pixels/inch
Mode: RGB Color
Contents
○ White
○ Background Color
● Transparent

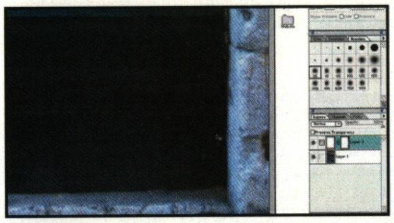
1 Make a new file in RGB mode. The image is 200mm high x 140mm wide, at 300dpi, which is standard printer resolution and sufficient for most commercial applications. If there is a possibility that the image will need to be enlarged slightly – to allow for a bleed on a page if the design should change, for example – increasing the resolution to 350dpi ensures that the image will remain crisp.



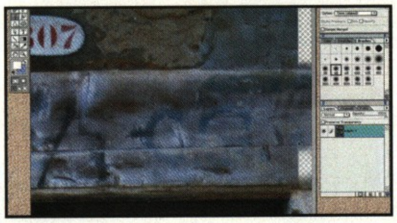
2 The file 'door' is our background. Paste it into the new file and size it to fit. The right-hand door jamb has been cropped off, but including it would improve the symmetry and framing of the image. Allow for pasting this in at the next stage by sizing the layer slightly inside the right-hand edge.



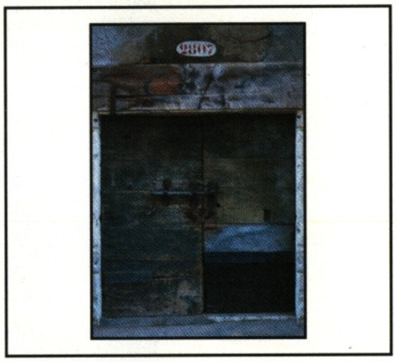
3 Copy and paste a strip from the left side of the door (our selection is shown to the left of the image in the screen grab). Flip this second layer horizontally and move it across to the right edge. (Hold Shift while moving selections to constrain movement to horizontal, vertical or 45 degrees.)



4 Add a Layer mask to this strip. Blend the two layers together using a paint brush to remove all of the straight edge to the left of the pasted layer. Be aware of lines within the image that need to continue across, such as the plank edges. At the top of the image, you have an area of stonework and boards that will not happily blend; remove the new layer altogether here. Merge the two layers. Once merged, it is easier to clone across the picture. If you want to avoid an effect that's too mirrored and symmetrical, reposition the more obvious details such as cracks in plaster and holes.



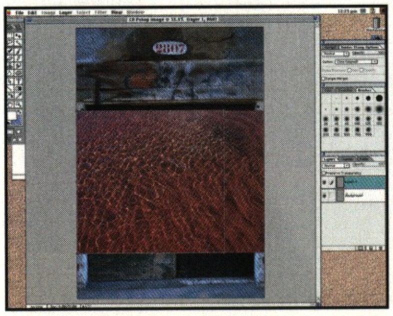
5 The boards and wall now need to be cloned to fill the remaining gap at the top right. Keep choosing new places to sample from, or a repeating pattern will be obvious. Using a larger brush, maybe 45 pixels, at 100 per cent Opacity to start with establishes the groundwork, and finer details such as woodgrain can be added with a finer brush and, if necessary, lower Opacity to blend, later. Again, find lines and tones that are already in the image and follow them across to the new area. Always do this at a high magnification, periodically checking the overall impression (Ctrl/Command-0).



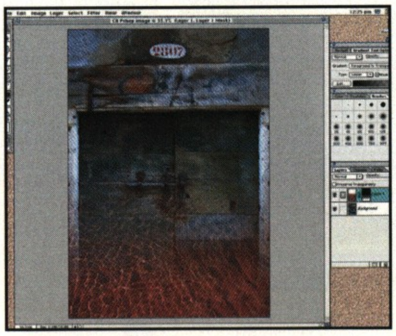
6 Your background is now complete: you should have information across the whole of the image. Flatten the image – this removes all pixels which are beyond the edges and keeps the file size down, and Save.

Part 2: Adding layers

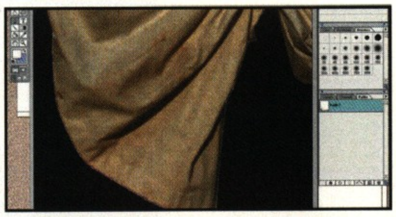
The development of the picture is unstructured and intuitive from here on, as layer is added to layer in response to what is happening on screen



1 The next element to place is the water. Open and copy the file, paste it into a new layer, and size it using Transform (Ctrl/Command-T) to fit horizontally. Holding down the Shift key while dragging the corner of a selection will constrain the proportions of the layer. Add a Layer mask.



2 Using the Gradient tool, set at Foreground (black) to Transparent mode and 100 per cent, remove the top edge of the water by dragging the tool from the top downwards. Again, constrain the tool's movement to the vertical with the Shift key.



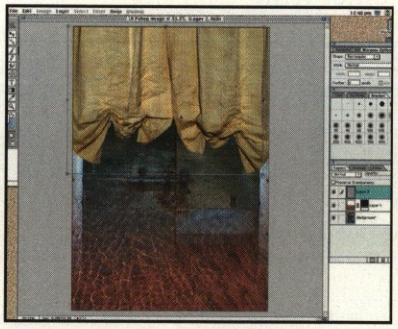
3 Now we'll select and paste the draperies. We've made a selection using the Pen tool in Paths. The advantages of a vector path over the Magic Wand are accuracy, a smoother edge, and the ability to move around nodes with the Hollow Arrow tool (beside the Pen tool in the Tool palette) as you work. Remember to turn off the path (don't delete it yet – if your selection doesn't look right, you can go back to the original file and alter it) before making your selection. Feather it by one pixel or so to soften the edge. Copy the draperies.

Connections

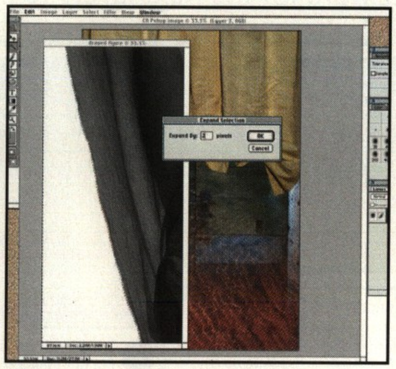
Using layers enables you to organise disparate elements within an image and set up gestalts from unrelated parts.

Evolution

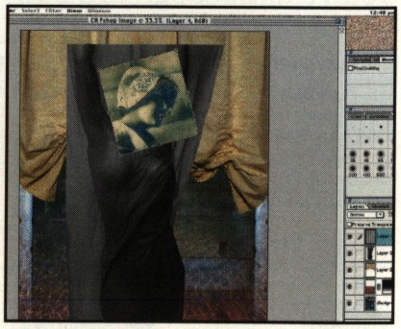
Pictures in progress are in flux, evanescent and growing simultaneously; the end result is never predictable.



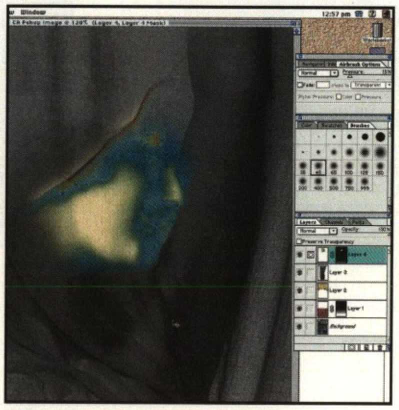
4 Paste into your new image. Using Transform, move to the top edge and size to fit. We have let it bleed off to both sides. If you have no shortage of memory, and the file isn't getting too unwieldy, don't remove the unseen parts of a layer until an image has begun to take shape. You can then change your mind about positioning if you like. If you're happy that you won't need the excess, select all (Ctrl/Command-A) and choose Crop with the relevant layer selected; this keeps the file size down.



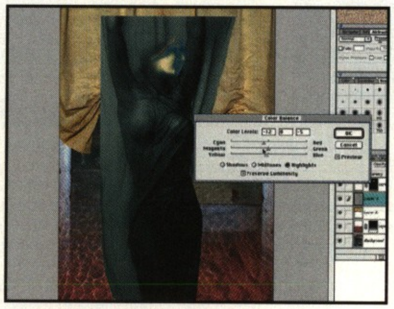
5 To select the draped figure, use the Magic Wand. The background is a flat white, so set the Wand's Tolerance to 1 in the Tool Options palette and click on both areas of white. Expand the selection by 2 to eliminate a halo effect; feather by 2 to soften, invert the selection (Ctrl/Command-Shift-I), copy and paste. The grayscale file will automatically be converted to RGB.



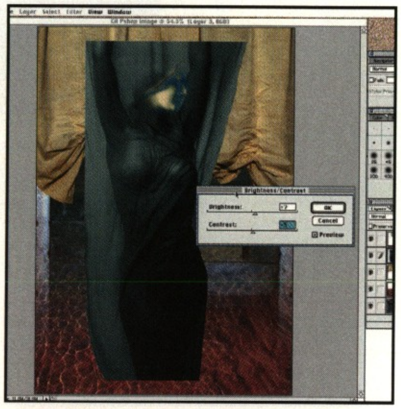
6 The head and arms in the photograph aren't in the right position for this picture; we want a more enclosed, rounded composition that will lead the eye back down into the image. To change this, start with the head. A junk shop find of an old postcard, aged in a solarised effect (File>Portrait), has mysterious features and a suitable amount of shadow across the face. Paste this on top of the figure and, using Transform, scale it down and rotate it until the proportions fit.



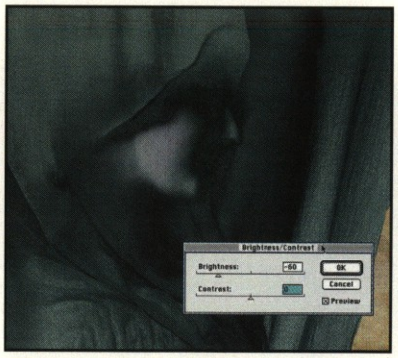
7 Adding a Layer mask, Hide All, paint the face back into the picture. The edge of the girl's headgear is a useful shape to link in with the drapes on the body. Make sure her neck isn't displaced.



8 The colours of the figure are very disparate so far. The figure itself was a greyscale file, and needs to be colourised before blending in the new face. Select the figure layer; using Colour Balance, add a soft green tone (remembering this woman embodies Water!) across the body. The settings used here are Shadows -5/0/+7, Midtones -8/0/-5; Highlights -12/0/-5 – but experiment to create your own atmosphere.

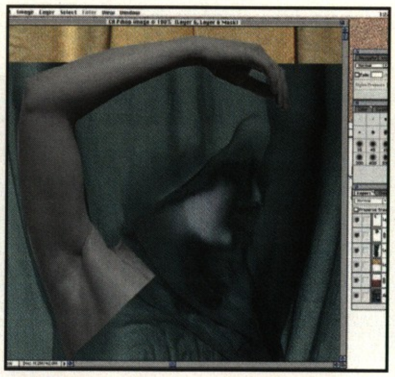


9 The figure now looks a little flat and dense. Using the Brightness/Contrast palette, bring back the highlights and enliven the modelling; the settings used here are Brightness +7, Contrast +3.

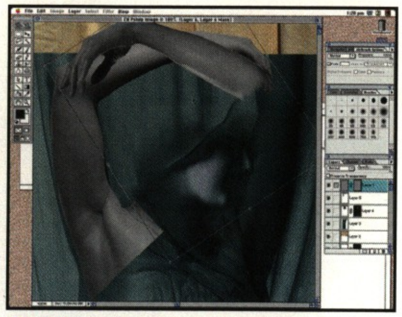


Brightness: -60
Contrast:

10 The face still doesn't look as if it belongs. Changing the Layer mode to Luminosity brings the hue in line with the layer underneath. The bright highlight on her cheek, and general lack of density, is then corrected, again using the Brightness/Contrast palette, this time setting the Brightness at -60.



11 The arms are next to be altered. Paste in arm 1, selecting it as you did the figure with the Magic Wand. Using Transform, scale and rotate it until it fits over the existing upper arm and curves around the head. Remember to save your file from time to time!



12 The second arm is now placed and rotated so that the palm lies along the first forearm. This arm is paler and less contrasted than the first; the settings in the Brightness/Contrast palette were Brightness +10, Contrast +35 to match it up. The upper arm should be removed using a Layer mask, because the elbow is at the wrong angle; copy, paste and flip horizontally the upper arm of arm 1 and move this layer behind the portrait layer.

Part 3: Adding more to our composition

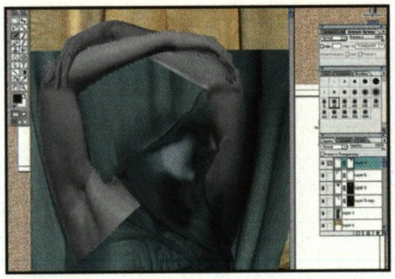
Creating tonal variation, and linking relevant layers together

Command-Z

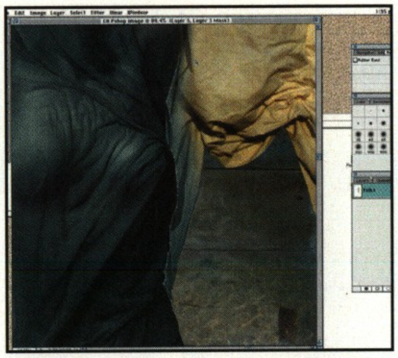
Unlike traditional artistic media, *Photoshop* enables decision making both forwards and backwards in time.

Priorities

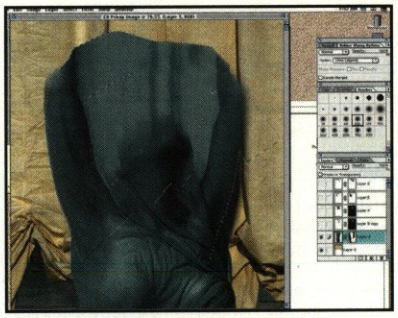
Complete familiarity with your program lets technical problems recede in importance and enables the real business of communication to happen.



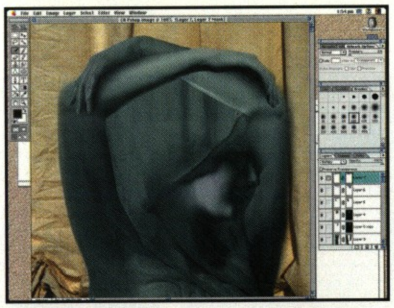
1 Adding Layer masks to all the arm layers and the figure layer, remove the thumbs and areas of the arms that cover the fingers so that the arms look entwined. Selecting one arm (clicking on a Layer icon in the Layers palette, while holding down the Control key will select the contents of that layer) will help you to remove the correct parts of another. Remove the shoulders where you don't need them, and blend all parts together.



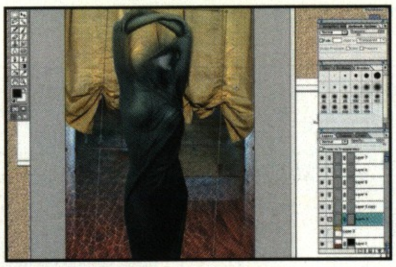
2 There are draperies to each side of the figure that we don't need; remove these in the Layer mask by drawing paths. Feather the selection to around 2 pixels for a softer effect, because these edges are slightly further away from the viewer.



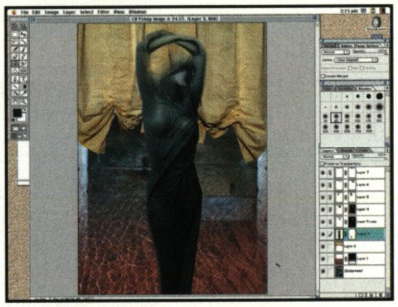
3 The arm layers are Luminosity mode, because this helps with blending. To extend the green hue of the figure behind the arms, select both arms (hold down the Shift and Ctrl/Command keys, while clicking on successive layers to add to selections). Hide the arm layers and extend the figure layer upwards behind the arms using the Clone tool.



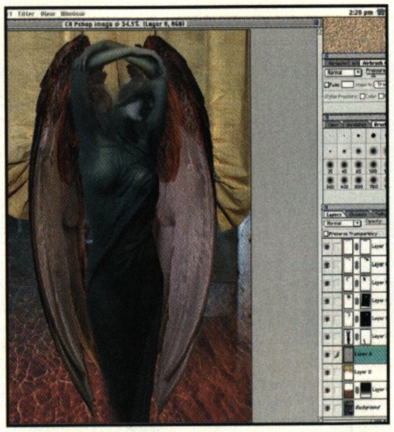
4 The arms are now the same hue as the rest of the figure. The shadows, however, are wrong; the left arm has a highlight underneath it, and we need shadows where the arms touch. Add a new layer at the top, choose Multiply mode, and, picking a dark green from the figure, paint in the shadows. Clicking on the top colour swatch in the tool bar brings up the Colour Picker box. Place the cursor over the hue you want in the image, or in the Picker itself, and click to choose. We've left the layer at 100 per cent and blended it using a mask. You could reduce the layer Opacity to blend, if you prefer.



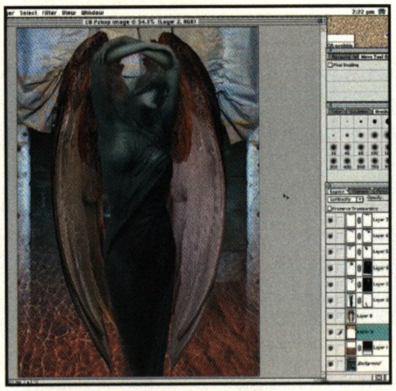
5 The figure is nearing completion; link all the relevant layers together and, using Transform, rotate until the stance is more vertical. We've also reduced its overall size slightly at this point. You may notice that the arm colour is softer now. We have gently removed some of the green-filled figure layer to allow the background drapery colour to influence the Luminosity mode arms. It is best not to merge all these layers, as the Luminosity effect in some areas would be lost if the final layer was Normal mode. You could make a composite selection, Copy Merged (Shift-Ctrl/Command-C) and paste to replace them, but you would have to be sure that the figure was in its final position.



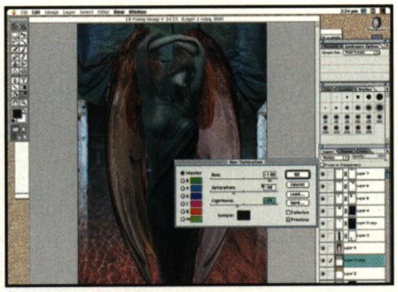
6 The figure now needs to be extended downwards. First, copy and paste the drapery to the right of the leg. Move this layer downwards and scale up until it fits the continuing line. Blend it in with a Layer mask. Using the Clone tool, choose parts of the figure to copy downwards. Merge this layer down into the figure below it (they are both Normal mode; their hues will be unaffected). Merging Down applies the Layer mask on the top layer. Only do it once you're quite sure you're happy with your work. We then added a new Layer mask to the figure and softened the edges.



7 The wings are next to be added to the image (representing another of the four elements, Air). Select them as you did the figure and arms, and paste them in behind the figure.



8 At this point, the drapery is beginning to look too far down in the background. Move it upwards until the lines in the folds to the figure's sides lead nicely into the new wings, and change the layer to a Luminosity mode to remove the strong yellow hue.



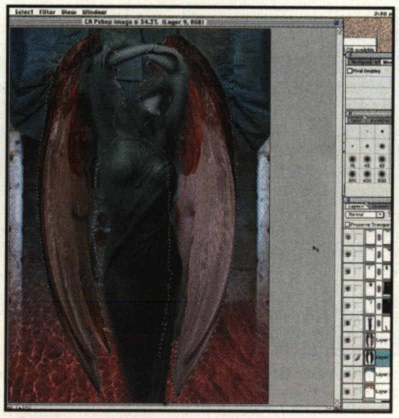
9 Now the draperies behind the figure are too pale. The composition would look better with an area closer in tone to the figure here. Duplicate the drapery layer, and change the mode of the upper of the two from Luminosity to Multiply. This instantly deepens the tone, but restores the yellow hue. In Hue/Saturation, change the values of the Multiply layer to Hue +140, Saturation -30, Lightness -20. This further deepens the tone, restores the dark greens and knocks the drapes into the background.

Why?

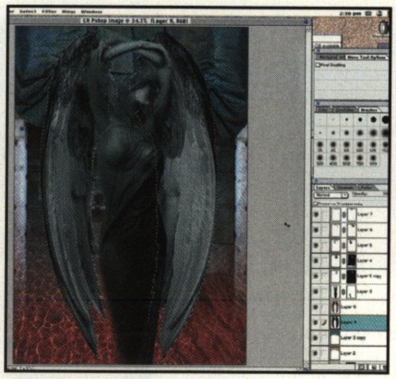
Pictures can inspire emotion, encourage exploration of the subject – literally and metaphorically – or make inner landscapes visible.

Why not?

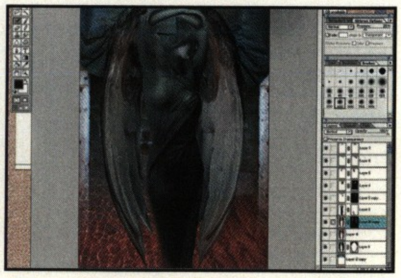
An element can be included symbolically, or simply because it's the right shape – don't get hung up on why you're including something. If you want to, that's good enough!



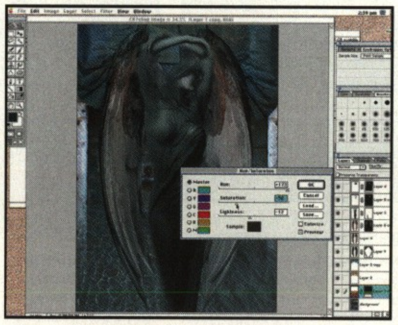
10 The wings are a little too close to each other. Select just one (hide all the layers above them to make this easier) and move it away from the other. Then select them both and move back to the middle behind the figure.



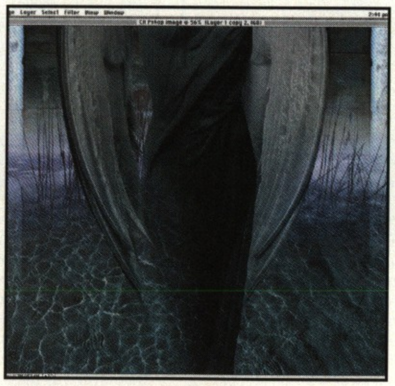
11 The hue of the wings is too strong and unharmonious. Create a new layer beneath the wing layer, make a selection from the wings in their new positions, and fill this selection in the new layer with a green. Changing the upper wing layer to Luminosity mode will get rid of the jarring ochres for the moment.



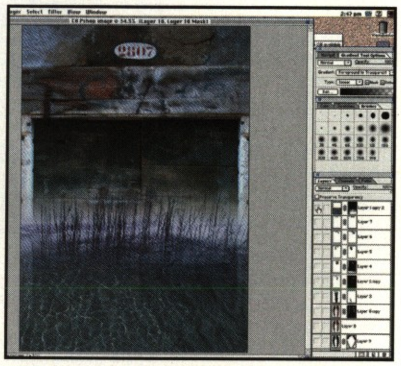
12 To bring back some subtlety to the wing colour, duplicate the wing layer again and change the mode to Normal; move the Opacity to 80 per cent. Add a Layer mask, Hide All, and gently paint back in some of the gold and red colours over the top of the green. We've done this particularly at the top of the wings behind the body, to separate them from the figure and increase the impression of depth in this area. If you're running out of memory, it's safe to remove this Layer mask as soon as you're happy with it; you can always duplicate the wing layer again if you change your mind.



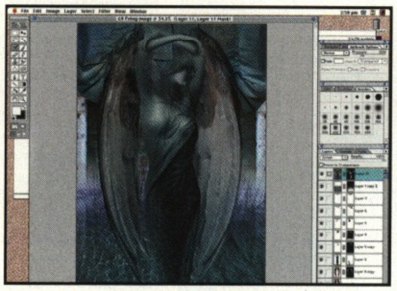
13 It's now time to attend to the water layer, which sits just above the background. The sandy hues aren't right for the cool palette we're creating, so, in Hue/Saturation, we changed the whole layer to blues. Decreasing the Saturation of the layer at the same time will also send it further back in aerial perspective. Finally, darkening the layer will help it to harmonise with the draperies. The values used are Hue +173, Saturation -50 and Lightness -12.



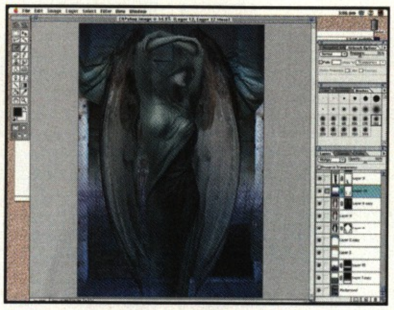
14 Next, we want to bring the water around the figure to suggest that she might be emerging from it. Duplicate the water layer, bring the new layer in front of the figure and wings, and change its mode to Soft Light. This allows the layers behind it to show through, and heightens the contrast of the whole area slightly.



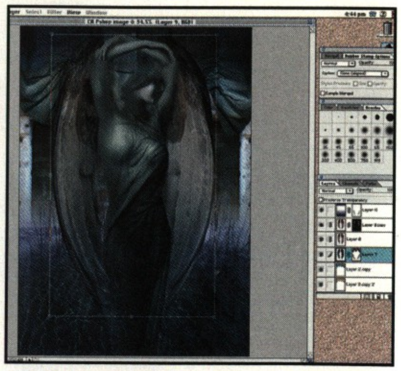
15 To make the landscape a little more defined, and to add a band of light to suggest a horizon, Hide all the layers except the background and the lower water layer. Copy and paste the 'water+reeds' file into a layer above the water layer; move it downwards until its bottom edge is at the bottom of the picture, and in a Layer mask remove the top and bottom areas with the Gradient tool.



16 Turn all the layers back on; the image now looks a little similar in tone across the figure and draperies behind. Select all, copy merged (Shift-Ctrl/Command-C) and paste the entire image into a new layer at the top. Select Screen mode for this layer, and add a Layer mask, Hiding All. You can now paint highlights onto your image, to bring out the arms, folds of drapery and the face, without changing the file below.



17 Continue to enliven the tonal range and strengthen the composition's tonal balance by darkening the top and bottom of the image. Add a new layer in Multiply mode, paint gradients of a dark blue (chosen from the water area towards the bottom) inwards from the top and bottom, and move the layer between the wings and the figure. Give it an Opacity of about 50 per cent to blend.



18 At this rather late stage, we decided the wings were too large, and, linking all three wing layers (the filled green one, the Luminosity mode one and the Normal one), Transformed them until they looked more comfortable.

Part 4: The final adjustments

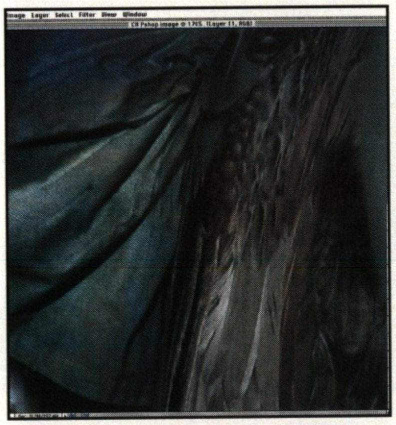
Improving the composition and removing unnecessary detail

Real life

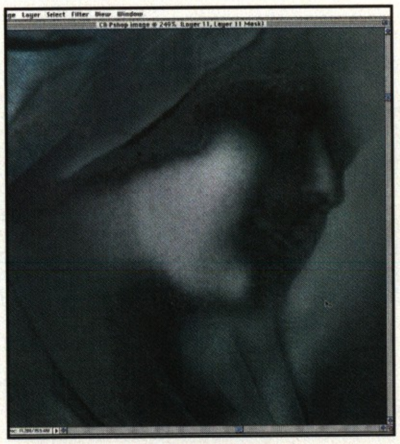
Old objects which have worn and decayed, carry the marks of a life and tell a story. They give depth and veracity to computer art which can otherwise become too clean, surgical and unrelated to real experience.

About what?

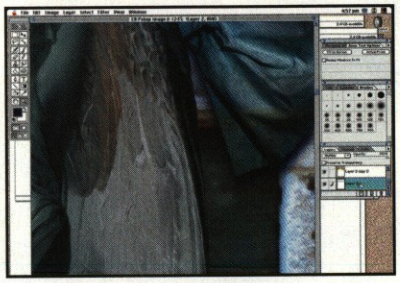
Inspiration can come from a poem, a conversation, or a single word. Think about what is important to you.



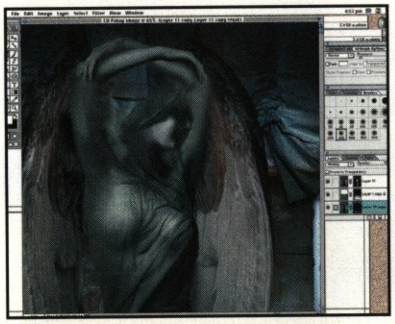
1 This scaling meant that areas of the top Screen layer didn't match what was underneath them; a Clone tool was used to paint out the 'echoes' that appeared on each side of the wings.



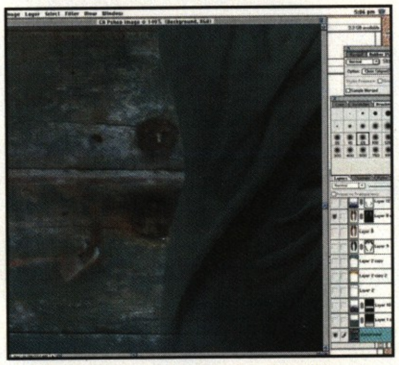
2 It's time to attend to the smaller details. The face can be lifted from the background by painting a highlight behind it in the top Screen layer.



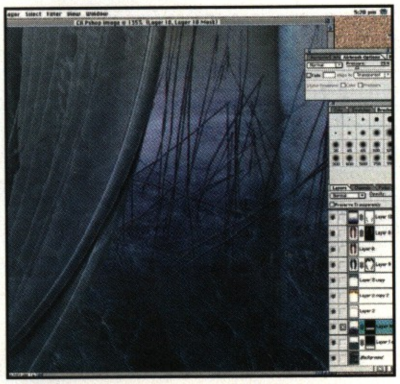
3 A drop shadow for the draperies is made by duplicating the Luminosity mode drape layer, selecting Preserve Transparency in the Layer palette and filling it with a blue. Deselect Preserve Transparency and apply a Gaussian blur of around 10 pixels. Move the layer downwards; make a selection of the Luminosity mode drapery layer below it and delete this unnecessary area of your drop shadow (<-). Change the Layer mode to Multiply, reduce the Opacity a little and move this layer below the Luminosity layer.



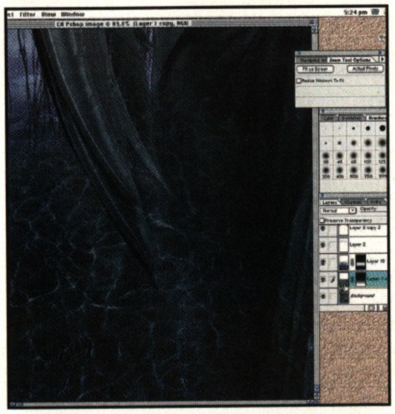
4 The shadows still need a bit of depth. Duplicate the Screen layer of the Copy Merged file (the top layer), move it below the Soft Light water layer, and change the mode to Multiply. Fill the Layer mask with black and paint in new areas of deeper tone. (Turn off the Layer mask – Disable Layer Mask in the pulldown menu under Layer in the top bar – to check where the additional tone looks good.)



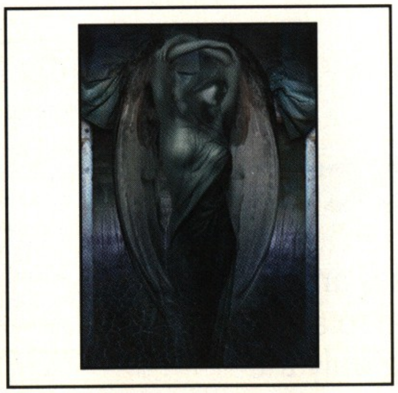
5 There is some door furniture to the left of the figure, which is unnecessary. Hide all the layers except the background and the figure (so you can see where you need to make the changes), then clone out the bolt and padlock to clean up this area of the image.



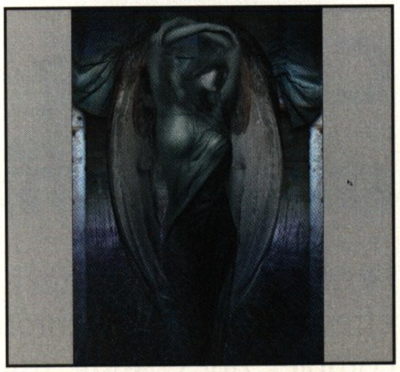
6 To reveal the door verticals a little, which will enclose the composition, gently remove some of the 'water+reeds' layer in the Layer mask. We used a fairly large brush (150 pixels) at a low pressure of 25 per cent to bring out the vertical without removing all of the reeds.



7 The water layer just above the background is currently at 100 per cent. This has been reduced to 75 per cent to give the impression of translucency and again bring out the architecture behind it.



8 And that's it! The image is now finished, barring some minor touching up. To do this, first flatten your image. It's always a good idea to save the layered version first, then save the flattened file separately. This enables you to make changes to the image if you have more ideas.



9 The final job is to go over the whole file at a high magnification to pick up any small imperfections with the Clone tool. There's a lot less of this to do if you're using a digital camera. If you have scanned in slides or used a flatbed scanner there are likely to be bits and pieces of lint or dust that will need to be removed.

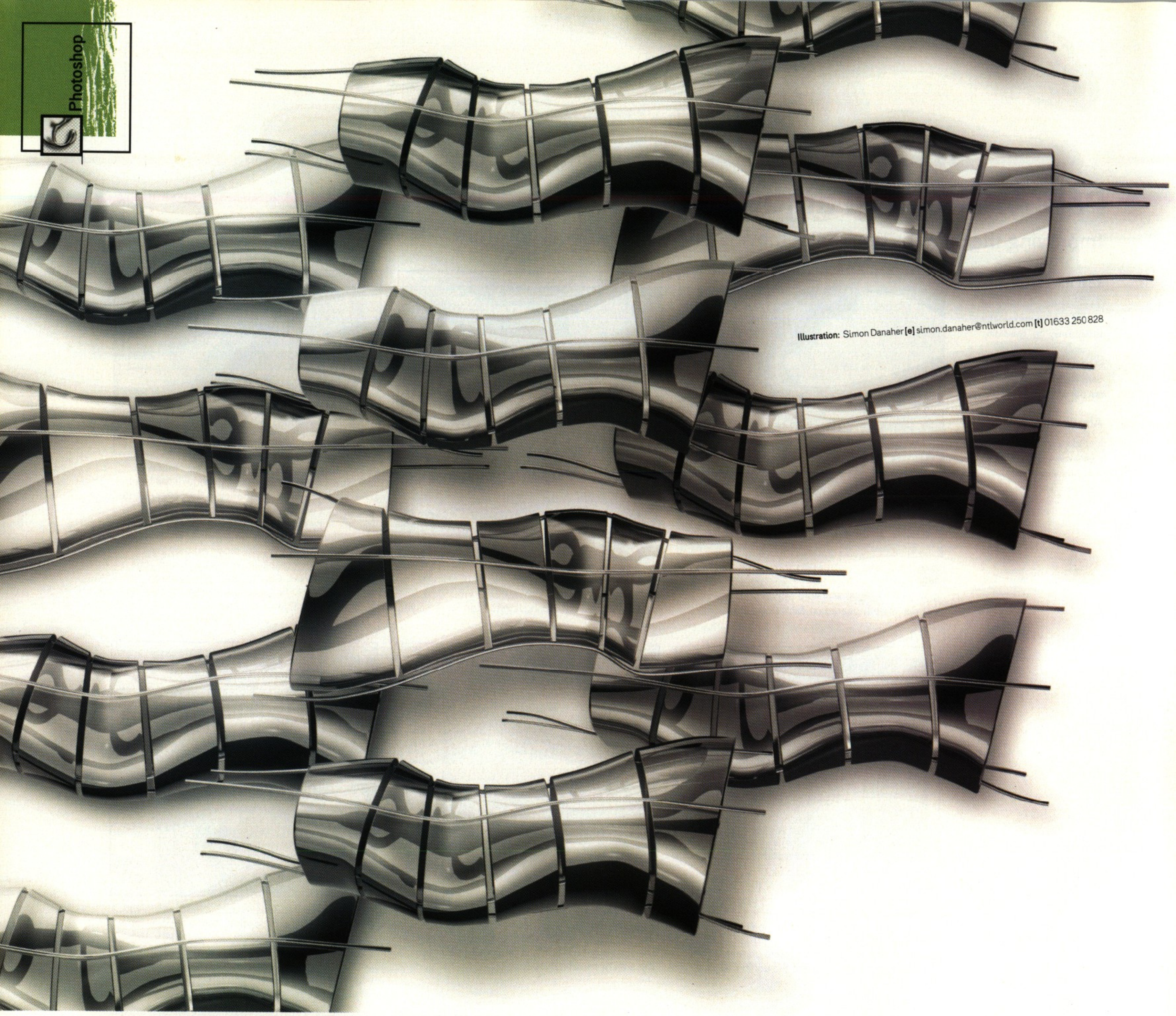


Illustration: Simon Danaher [e] simon.danaher@ntlworld.com [t] 01633 250 828

Creating metal effects

How to create metal textures and effects, from simple chrome to a complex zinc coating, using only the core tools in *Photoshop 6*

The great thing about *Photoshop* is that it's possible to create any effect imaginable, since at the very least you can use a brush and paint it by hand. However *Photoshop*'s power comes from its ability to manipulate a large number of pixels to create effects in just a few simple steps. In this tutorial, we'll show you how to create cool metal textures and effects, from simple chrome to a complex zinc coating, using only the core tools in *Photoshop 6*.

Many of the skills demonstrated can be applied directly in earlier versions of *Photoshop*, plus we've included a variation of the classic chrome effect that could be used with *Photoshop's* earliest incarnations with layers. *Photoshop 5* introduced layer effects which helped to speed up the creation of effects such as glows and drop shadows. In *Photoshop 6*, this section of the program has been expanded in the Layer Styles features, which makes creating the effects in the tutorial faster than before.

If you don't have *Photoshop 6* yet, turn to page 9 to find out how to dowload a demo version for Mac and PC.

Expertise by Simon Danaher
[e] simon.danaher@ntlworld.com
[t] 01633 250 828

Files on disc

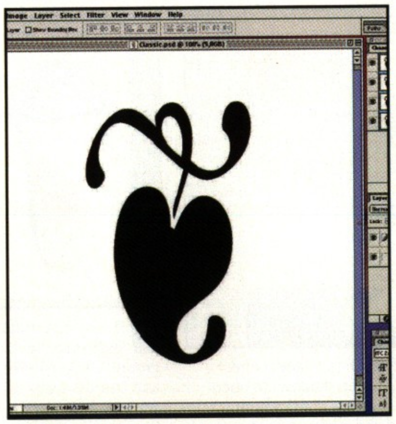
Tutorial files are on the coverdisc in the folder Tutorials\Photoshop\Creating metal effects

Part 1: Classic chrome

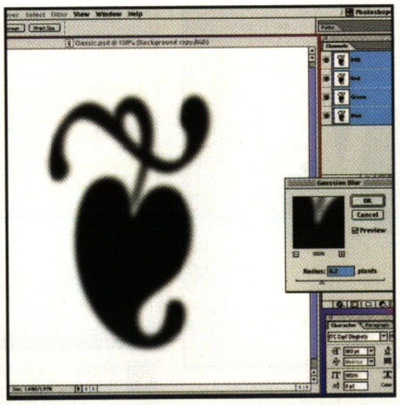
This is a hands-on method for creating chrome-like metal effects that stems back to early versions of *Photoshop*

Move tool

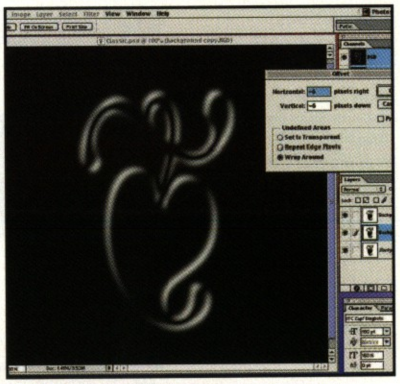
You can use the Move tool and the arrow keys to move a layer very precisely. Hold the Shift key while pressing an arrow key to move the layer 10 pixels at a time.



1 Begin with a shape that you want to apply the chrome effect to. We've used a classic Dingbats text element. If you don't have that font installed, open the file Dingbat.PSD from the CD.



2 Flatten the document so that you have a single layer with black and white pixels (no transparent ones, that's important). Duplicate the layer and hide the original. Apply Gaussian blur to the copy, say around 6–10 pixels in radius.



Offset

Horizontal: -6 pixels right

Vertical: -6 pixels down

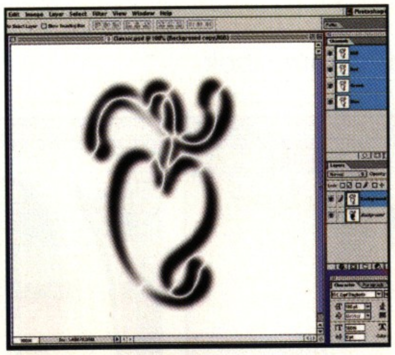
Undefined Areas

○ Set to Transparent

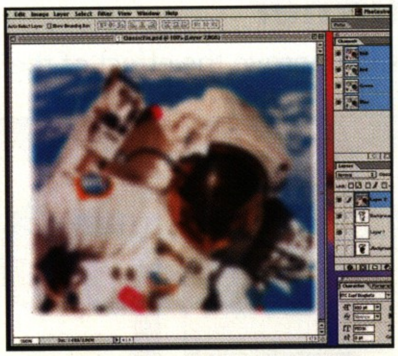
○ Repeat Edge Pixels

● Wrap Around

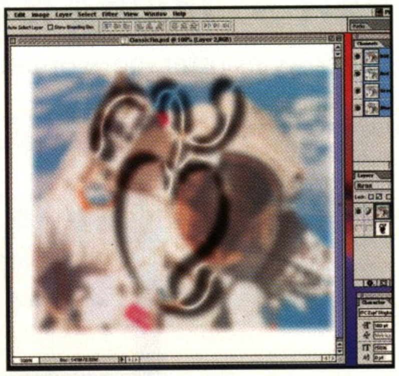
3 Duplicate this blurred layer and change its Layer mode to Difference. The image will go black. Using the Offset filter (Filter>Other menu) and enter a value to offset the Difference layer. We used 6x6 pixels. Do the same for the lower blurred layer but enter values of -6x-6.



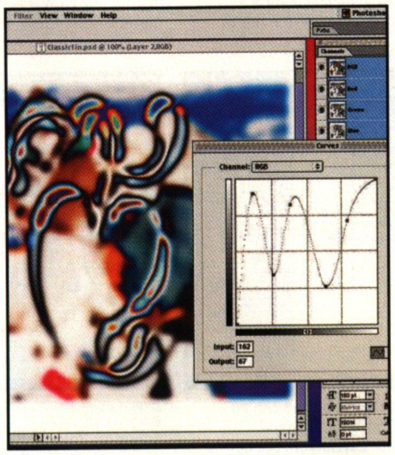
4 Link the two offset layers and merge them into a single layer (use the Merge Linked command from the Layer Options menu). Finally, invert the merged layer by typing Command-I. This layer is our reflection highlight layer.



5 Now to add the reflection image. This can be any image you like really, but we've used the Astronaut image from the Photoshop 6 Samples folder. This is dragged into the chrome document then blurred.



6 The layer is reduced in Opacity to about 50 per cent then linked with the highlight layer (click the empty box next to the eye and a chain link appears). The two layers are then merged.



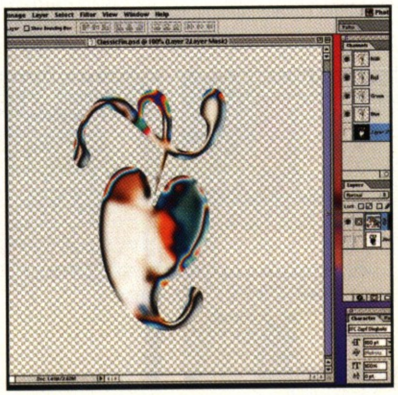
Curves

Channel: RGB

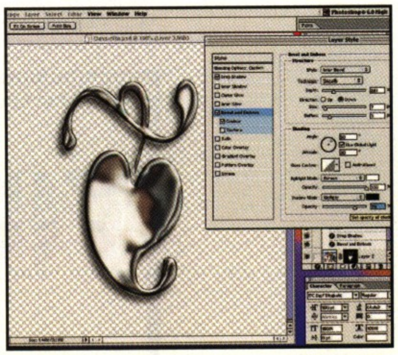
Input: 162

Output: 67

7 The metal effect is increased by applying Curves to the layer. With the Curves dialog open, experiment to get a high contrast look.



8 We need to get the outline of the element back, so turn off the chrome layer, and with the original layer visible, go to the Channels palette and Command-click any channel to load the selection. Apply this, inverted, as a Layer mask to the Chrome channel.



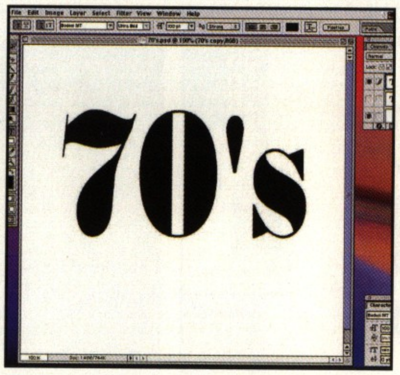
9 Finally, add the 3D effects. With the element selection still active, create a new layer above the chrome and fill it with white. Change the mode to Multiply then apply Layer styles to this null layer. We added Inner Bevel and a drop shadow. Finally use a Hue/Saturation adjustment layer to desaturate the chrome colours. See the file ChromeFin.psd on the CD.

Part 2: Layer styles

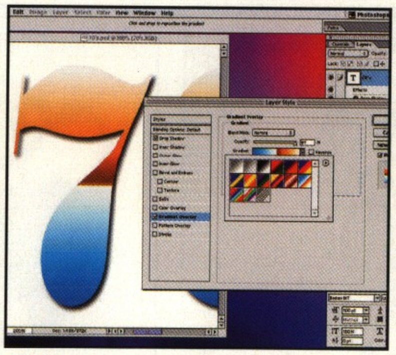
Layer styles in *Photoshop 6* make creating chrome-like effects very quick and easy

Calculations command

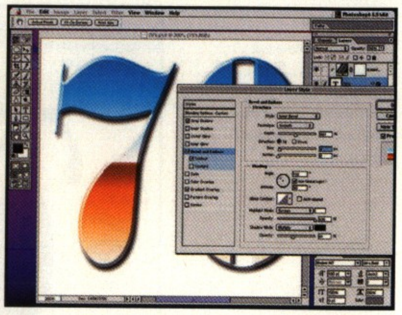
Before there were layers and what not, you used to have to use the Calculations command (Image menu) to perfrom Blending mode operations using channels.



1 This next effect is another classic chrome but it's only achievable using *Photoshop*'s Layer styles. Create a new document and add some text like so.



2 Apply the Layer Styles Drop Shadow effect (Layer>Layer Styles>Drop shadow) to open the Layer Styles palette. Activate the Gradient Overlay style as well and choose the default Chrome gradient from the pop-up.



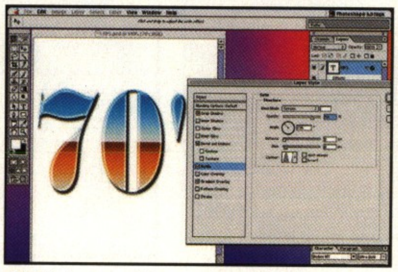
3 It may be upside down, so click the Reverse button to flip it. This is the classic sky and ground chrome reflection. Now activate the Bevel and Emboss style, set it to Inner Bevel and adjust the settings to create the extruded type look. Reduce the Opacity of the gradient and change the colour of the text to taste.

Part 3: Taking it further

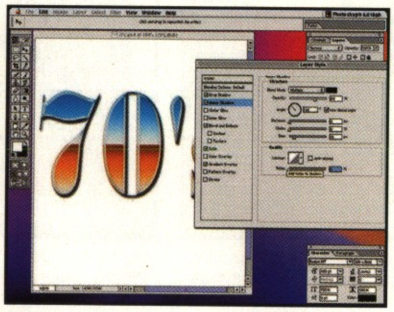
Layer styles offer more options to improve the effect of the EZ chrome look

Layer style presets

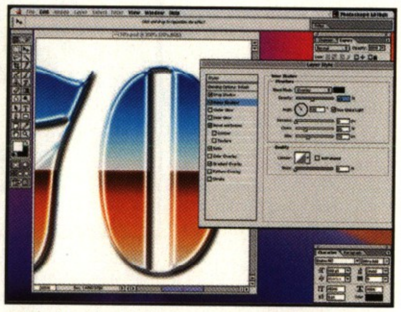
At any time you can save a Layer style setting as a preset which can be used again in other documents. In the Layer styles dialog click the New Style... button and name the style.



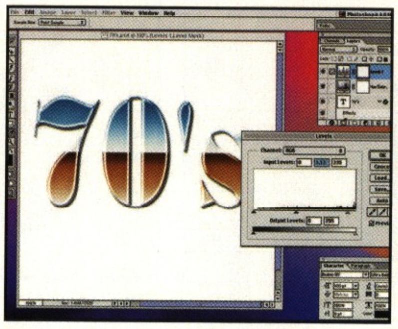
1 To improve things, we can add some more styles. Activate the Satin option and change the colour to white. Keep the Distance and Size low, say 5 and 8 pixels respectively, but change the Contour to one of the double hump options. This produces the highlight effect similar to the hand-made one earlier.



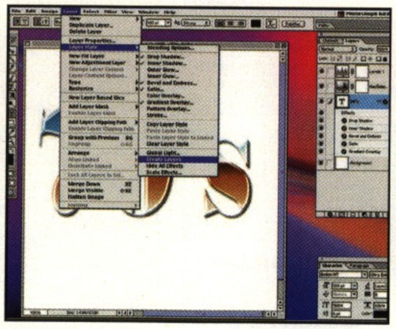
2 Next we can add some edge shading to bring out the shapes of the numbers (or whatever you used). Activate the Inner Shadow style and set the Distance to 0 pixels. We're not creating a shadow but using the style to darken the edges.



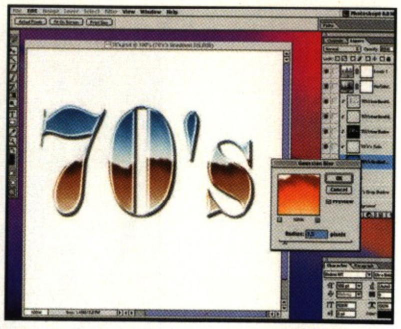
3 The effect clashes with the Satin effect, so change the Blending mode from Multiply to Overlay. This prevents it from dampening the highlights. Now adjust Size, Choke and Opacity to get the right effect, which should be subtle.



4 The Overlay mode has the side effect of darkening the gradient reflection and increasing its saturation. Both of these problems can be fixed by adding Hue/Saturation and Levels adjustment layers to desaturate and brighten the result.



5 This is looking quite retro, but we can go still further. Select the Type layer and choose Layer Style>Create Layers from the Layers menu. A warning appears to say that not all effects work as layers. Click OK. Each style is now a separate layer.



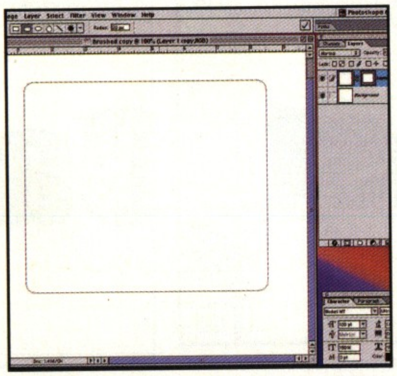
6 Select the Gradient layer and apply the Distort>Waves filter to it to create a gentle undulation of the gradient. Next apply the Ripple Distort filter, and finally a bit of Gaussian blur. The result is a textured, retro, chrome effect. See the file 70's.PSD on the CD.

Part 4: Brushed aluminium

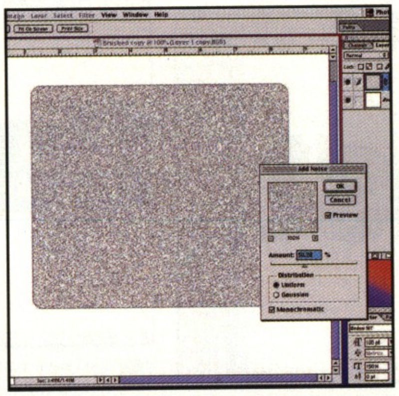
Creating brushed aluminium is quite straightforward if you know how, and is *de rigueur* for application or Website interfaces

Saved styles

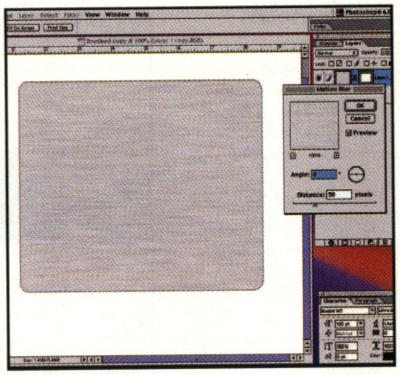
To apply a saved style preset, open the Styles palette (Window menu) and click on one of the icon buttons to apply the style to the selected layer.



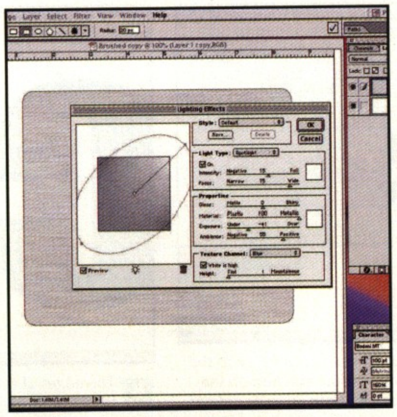
1 Create a new layer in a fresh document and apply a clipping path by choosing Layer>Add Layer Clipping Path>Reveal All. Using the Rounded Rectangle Shape tool draw out the shape in the layer, making sure the Clipping path is selected first.



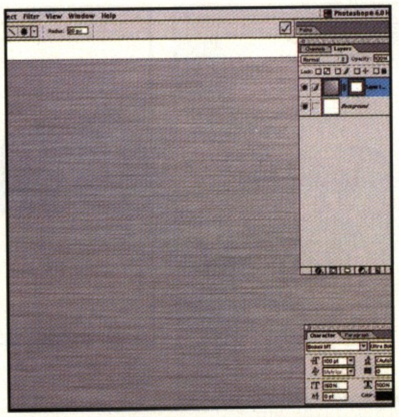
2 Fill the layer with white then add some noise. Use Monochrome Uniform noise of around 50 per cent. You can use Gaussian noise but the result is less satisfactory for this effect.



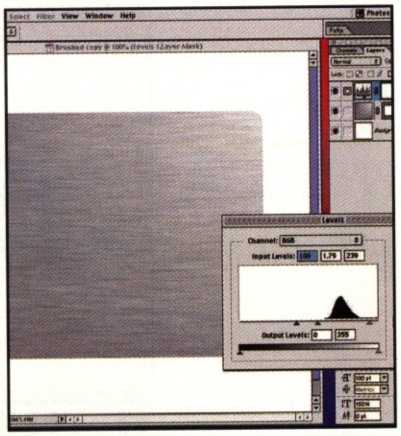
3 Next apply some Motion blur to the layer. The amount of blur depends on the length of the brushed grain you want, and of course the direction is set by the angle control. We're going for a fairly fine high-tech look here.



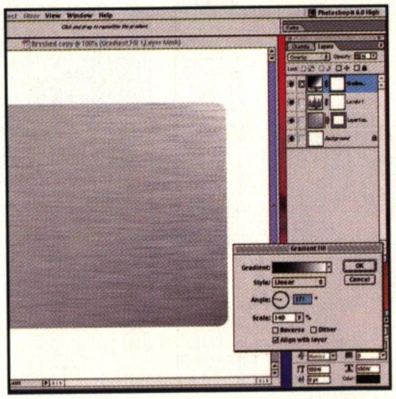
4 Now the all-important step to creating the brushed surface is to apply the Lighting Effects filter. Use a Spot light to create an even illumination with only a slight gradation in tone. Adjusting the Exposure and Ambience helps.



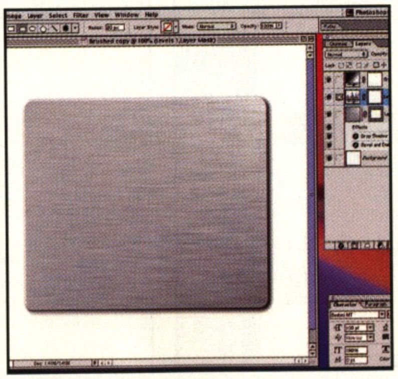
5 To create the bump in the surface, set a texture channel for the Lighting Effects filter to work from. Choose any of the RGB channels for this, but use a very low height setting of between 1 and 3. The effect is very subtle.



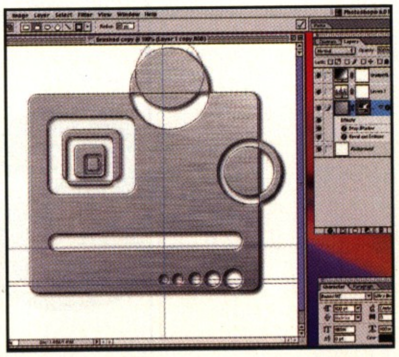
6 A bit of levels works wonders on the layer to bring out the grain without the surface going too lumpy. Be careful not to cause the lighter parts to go completely white.



7 A Black-White Gradient layer can be used in Overlay mode to add some more shading to the aluminium if needed. It can help to even out the tone of the aluminium without making it look flat.



8 Add some depth to the panel by selecting the noise layer and applying a drop shadow and Bevel Layer style. Of course, it doesn't have to be a panel: the effect works for text, buttons or any shape you like.



9 Because we used a Clipping path, we can change the shape and the effects will adapt to the changes. Select the Clipping path and use the Shape tool to subtract from the main rectangle (select the subtract button in the Options bar). See the main panel file Alu.PSD on the CD.

Part 5: Creating other types of metal

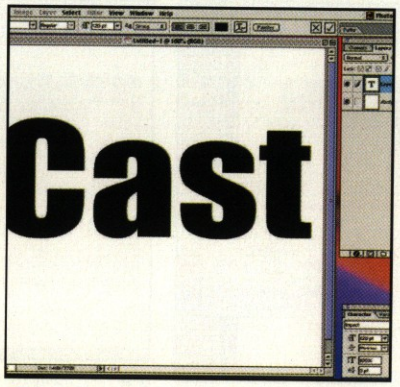
This next effect simulates a machined/cast metal that uses two different textures at the same time

Vector artwork

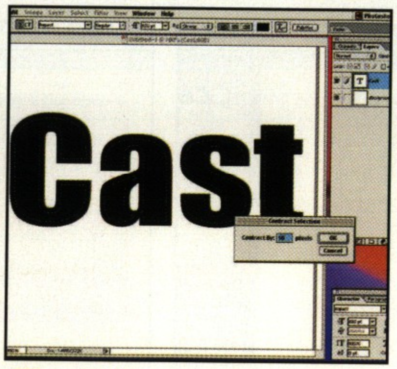
Note that these effects aren't limited to text. Any vector artwork can be used, although clean edges are usually best to begin with, such as those from an imported vector drawing.

Preventing blur

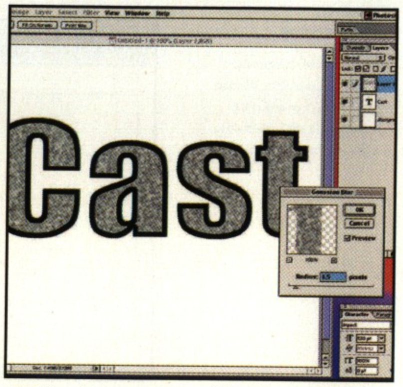
Locking the transparent pixels of a layer prevents the edges of a layer being blurred. Only its interior will be blurred.



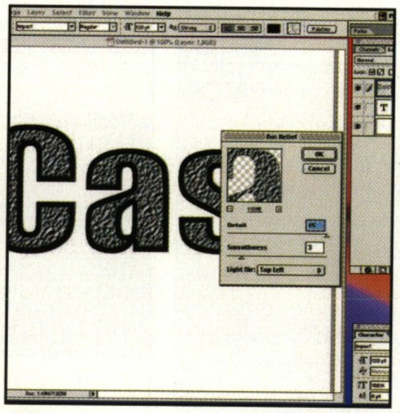
1 Create a new document and add a text layer as before (or place a vector artwork if you have one suitable). A nice chunky font like Impact works well.



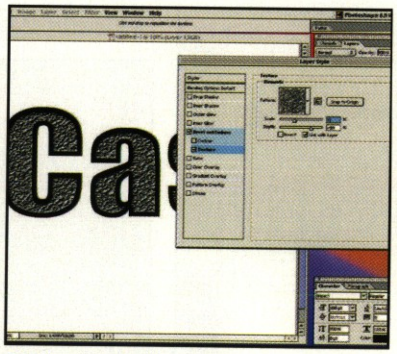
2 Load the text as a selection by Ctrl/Command-clicking on it. Choose Select>Modify>Contract and enter a value of around 10 pixels (this depends on the size of the document you created). The idea is to create an inner portion of the text where the cast texture will be.



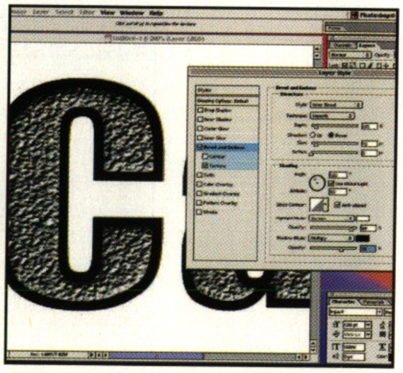
3 Create a new layer and fill with white using the selection. Deselect (Command-D) and add a lot of Noise to the layer. Turn on the Lock Transparent Pixels switch at the top of the Layers palette and blur the noise.



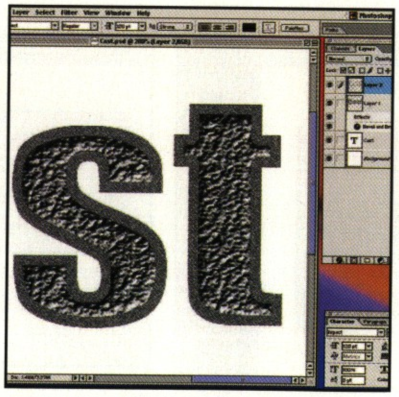
4 Apply the Bas Relief filter (Filter>Stylise menu) to the noise layer with a high detail and low smoothness setting to create the first casting texture.



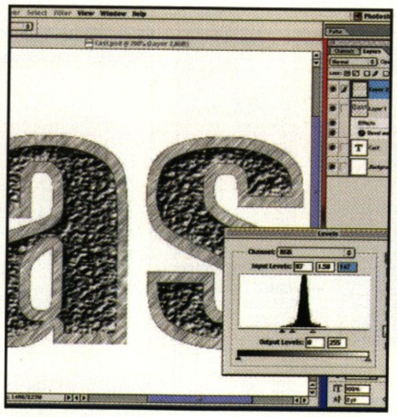
5 Apply the Bevel and Emboss Layer style to the layer, set to Down direction, and turn on the Texture option. Click on Texture to go to its options. Select the second texture from the list and reduce the scale to about 70 per cent. Leave Depth at around 100 per cent. This texture merges with the bas relief to create the casting texture.



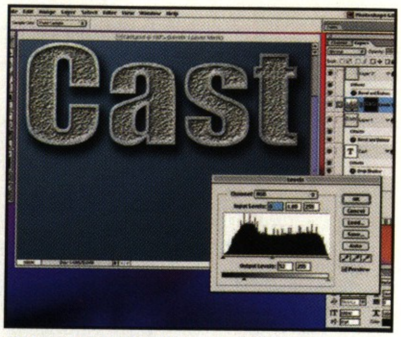
6 The edges of the cast parts need to rise towards the edges of the letters which we can do by adjusting Bevel and Emboss settings. Increase the Depth and Size but not Soften. You have to reduce the Texture depth to compensate, so experiment until you strike the right balance.



7 Next we can create the flat, machined edges. Load the text layer as a selection then subtract the inner cast layer (Alt/Option-Ctrl/ Command-click). Create a new layer and fill this with 50 per cent grey, then apply some uniform noise.



8 Lock the transparent pixels again and apply some Motion blur to the layer to create the grain in the metal. Use Levels to increase the contrast of the streaks.



9 Apply lighting effects as we did for the brushed effect to create the machined surface. Finally apply an Inner Bevel to the layer using a very small Size value and moderate Depth to create a thin hard bevel. To finish off, add a drop shadow to the text layer. A Levels adjustment layer can be added to control the tones in the Cast section making it more metallic. See the file Cast.psd on the CD.

Part 6: Galvanised metal

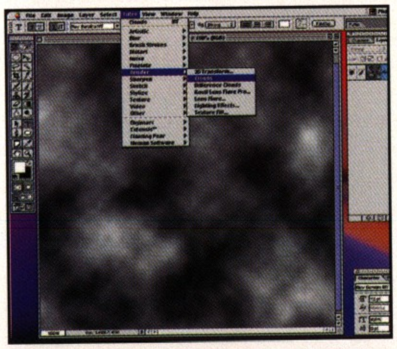
To prove that you can create just about any metal texture using *Photoshop*'s stock tools, we'll create a galvanised look

Layer sets

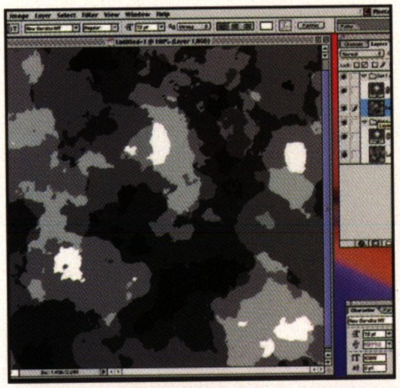
You can use Layer sets for the two cloud and posterize layers if you like: it helps to keep things tidy at least.

Adding contrast

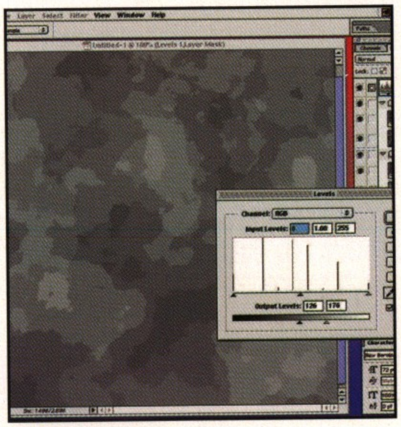
If you find that the scratches don't show up well enough, lighten the patches layer with the levels adjustment layer already there.



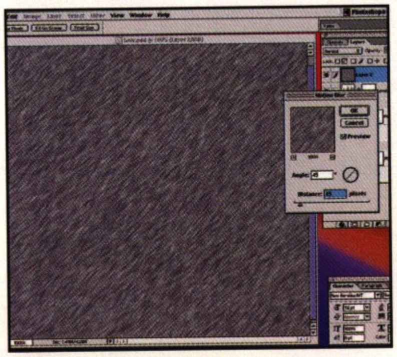
1 This texture is quite involved, but if you look at a piece of galvanised metal, you can identify four main parts. Firstly, large patches; secondly, a finer crystalline texture; then surface scratches; and lastly, the way surface highlights tend to show through the crystalline pattern. Begin in a new document and render some clouds.



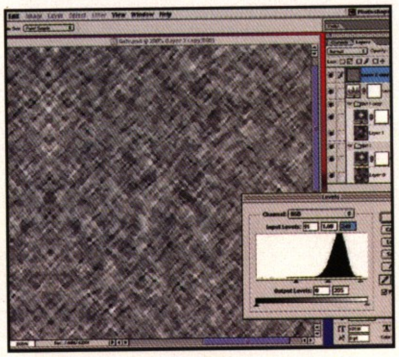
2 Add a Posterize adjustment layer set to 4 levels to create the patches. Duplicate Render some more clouds in another layer and apply another Posterize adjustment layer. Set the second clouds layer to Overlay mode.



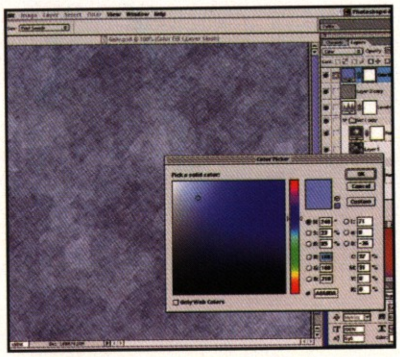
3 Next add a Levels adjustment layer to control the brightness of the patches. Do this by dragging the Output sliders inwards.



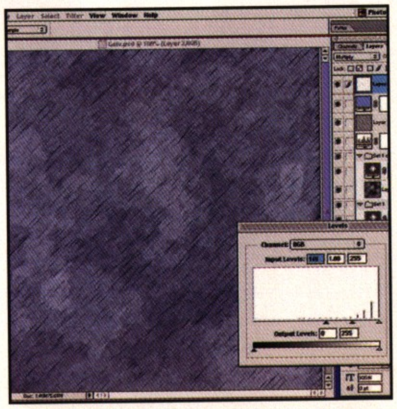
4 Now for the crystalline texture. Fill a new layer with white and add a large amount of noise, then apply some Motion blur at 45 degrees. Duplicate the layer, flip it horizontally and apply an Overlay mode.



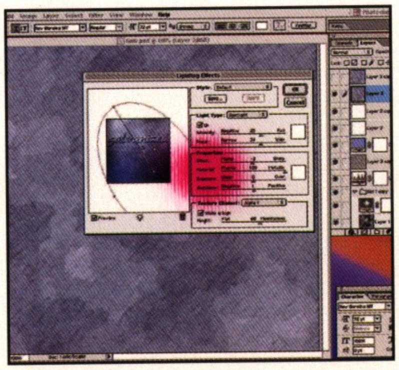
5 Link the two Motion blurred layers and merge them (Layer Options>Merge Linked). Apply the Pixelate>Facet filter to create the crystal-like pattern and finally adjust the contrast using some levels.



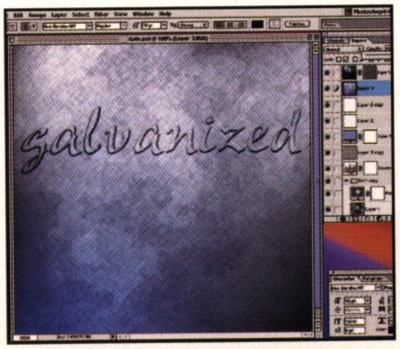
6 Apply this layer in Overlay mode and reduce the Opacity to around 50 per cent. We can add a bit of colour to the metal using a solid colour layer. Use a light purple/blue colour applied in Colour mode and adjust the Opacity to taste.



7 The scratches are made using the brushed aluminium technique. Use Motion blurred noise, but thin out the streaks so that you get mostly the dark ones using Levels. Duplicate this layer and flip it horizontally. Apply some more Motion blur to create much longer scratches in this layer.



8 That's the basic texture. We've added some text to an Alpha channel to use with the Lighting Effects filter. Before you start, you need to either flatten the layers or make a flattened copy layer (Select All, Ctrl/Command-Shift-C to copy, then paste). Duplicate the flattened layer. Apply the Lighting Effects filter using the text Alpha channels as the bump.



9 To create the mottled highlights, apply the same lighting effects on the second layer but disable the bump channel. Set this layer to Screen and add a Layer mask from the crystalline layer (make the crystalline layer visible only, set Opacity to 100 per cent and Ctrl/Command-click on a channel to load its colours as a selection). Use Levels and the Mask to control the 'metalness' of the highlights. See the file Galv.psd on the CD.

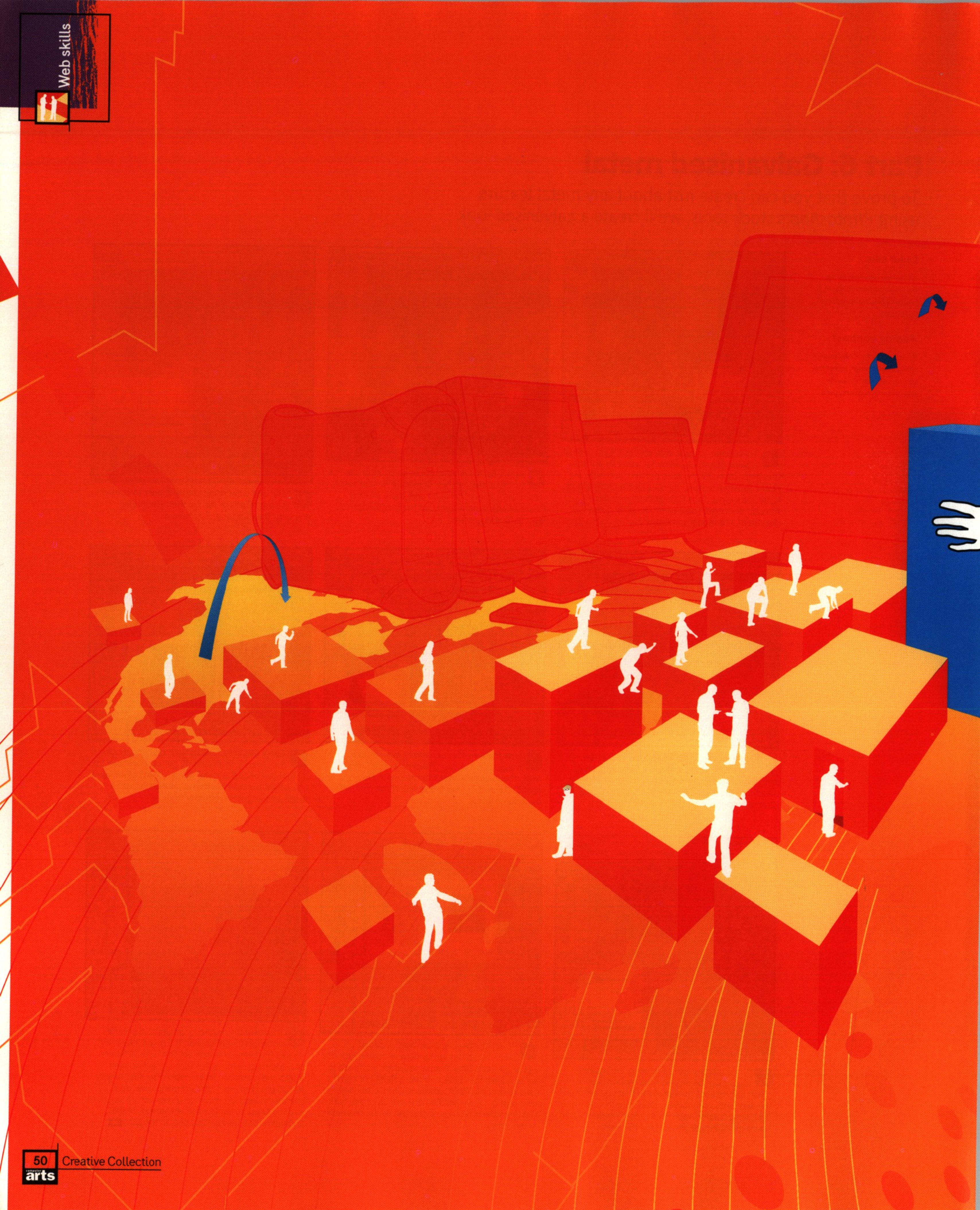


Illustration: twelve:ten design [w] www.twelveten.com

Web skills

It may have taken a knock in the last 12 months, but the Web still offers an increasing number of opportunities for professional graphic artists…

52 **Creating a Flash film editor**

56 **Designs on TV**

60 **Fireworks 4: using the new features**

66 **A tower block navigation system**

70 **Interactive maps in Flash 5**

74 **Interactive Flash techniques**

80 **Layout and page design**

What you'll need

Here we've assumed that you already have Macromedia's *Flash* and *Dreamweaver*. If that's not the case, then you could download 30-day demo versions of both from the Macromedia website at [w] www.macromedia.com

ONLINE
EDIT
SLICE
A SEQUENCE
SLICE
SOURCE/INPUT
25
A SEQUENCE
OUTPUT
24FPS 12 FPS

Illustration: Kerry Roper Website: www.youarebeautiful.co.uk Email: roper_k@hotmail.c

Creating a Flash film editor

Using *Flash 5*, we show you how to generate one of the most complex pieces of sticky content on the Web…

Creating a decent animation in *Flash* can be tricky enough, but what about designing an entire creative app that users can play with to edit their own movie clips? This is precisely the project Magnetic North's Creative Director, Brendan Dawes, began contemplating a few years ago. He wanted to create a project that would push the technology and keep site visitors coming back for more. When *Flash 4* came along, he decided to undertake a personal project, creating a Web-based application that would enable users to re-edit a scene from a movie.

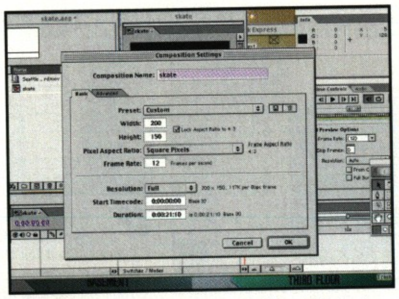
This tutorial shows you how to produce a similar app, updated for *Flash 5*. The editor works by pulling in external SWF files into a parent movie and playing each clip back. Each clip has some scripting that controls a preload as well as controlling the timeline. To actually construct the movie, the user drags a clip into the timeline. This then sets a relevant variable so that when we go to load in the external SWF, we only load in the ones that are needed in the correct order.

Tutorial files

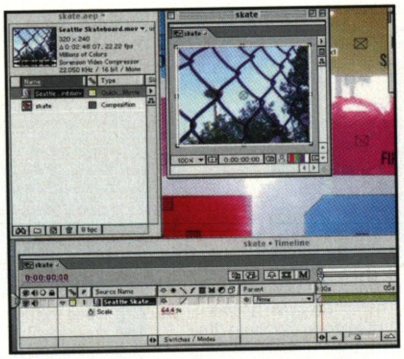
You'll find supporting files on your coverdisc in Tutorials\Web skills\Creating a Flash film editor. Expertise supplied by Brendan Dawes
[e] bren@brendandawes.com
[w] www.brendandawes.com. Footage supplied by Mark Towse [e] mark@ bigimpact.tv

Part 1: Preparing the files

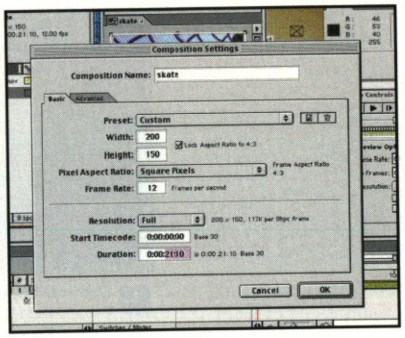
Firstly, we need to get the files ready to be used in the *Flash* editor. If you have *QuickTime Pro* you can export your movie as an image sequence. We originally used *After Effects* to export all the bitmaps…



1 Create a new composition in *After Effects* at 200x150 with a frame rate of 12 frames per second. We don't want the bitmaps to be too large for *Flash* to handle, so this is quite a good size. The frame rate must match the final frame rate of your *Flash* movie.

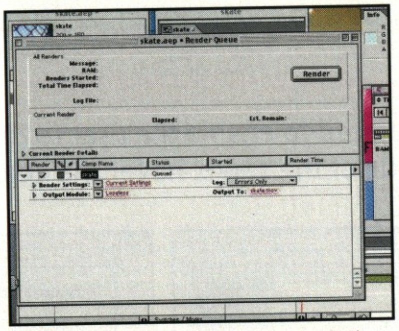


2 Import your movie footage, then drag it into your new comp and use the Scale attribute (press S) to scale the movie to fit the window.

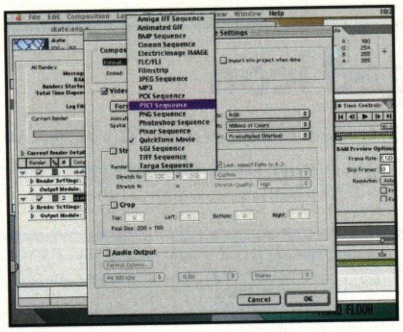


Composition Settings
Composition Name: skate
Preset: Custom
Width: 200
Height: 150
☑ Lock Aspect Ratio to 4:3
Pixel Aspect Ratio: Square Pixels
Frame Aspect Ratio 4:3
Frame Rate: 12 Frames per second
Resolution: Full 200 x 150, 117K per 8bpc frame
Start Timecode: 0:00:00:00 Base 30
Duration: 0:00:21:10 is 0:00:21:10 Base 30

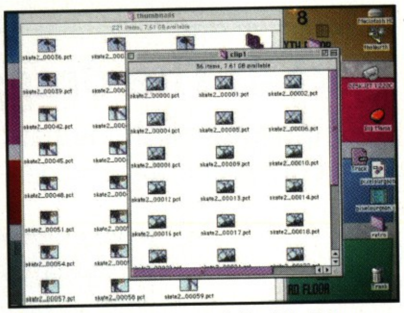
3 Use the Composition Settings dialog box (CTRL+K or Command+K) to set the composition length to the desired length you want the footage to be.



4 Press CTRL+M or Command+M to make the movie and output it as a series of bitmaps. In the Render Queue window, click on Lossless next to the Output Module to set the correct output.



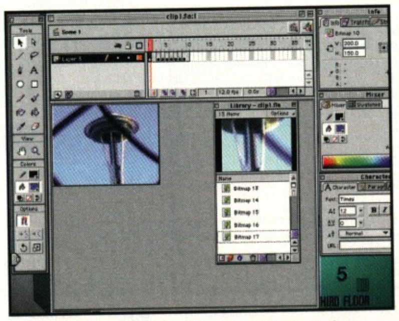
5 In the Output Module Settings window, use the Format dropdown menu to choose Pict Sequence. Also, make sure the Render Settings are set to Best. Click Render to export all the bitmaps.



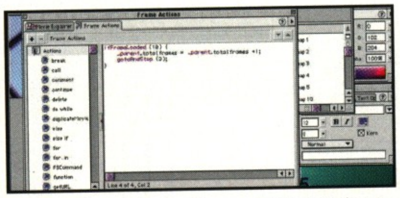
6 You should now have a folder full of bitmap images making up the sequence of the movie. Now you need to separate out each edit point into their own folders, so we can later create the separate SWFs for the *Flash* editor.

Part 2: Creating the clips

Each clip is a separate SWF that contains a series of bitmap images, together with some code that will pre-load the images…



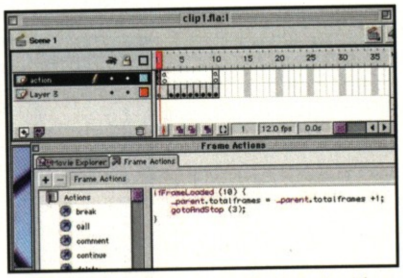
1 Create a new *Flash* movie 200x150 with a frame rate of 12fps. In Layer 1, import the first clip's bitmaps. Select the bitmaps on the timeline and drag so the first bitmap is on frame 3. Next, hold Alt/Option and drag a copy of the third keyframe onto frame 1. This is so the first frame is always on view with each SWF clip.



2 For the pre-load, add a new layer above layer 1. Double-click the first keyframe to show the Frame Actions panel. Add this script:

```
ifFrameLoaded (10) {
    _parent.totalframes = _parent.totalframes +1;
    gotoAndStop (3);
}
```

Alter where it says 10 to be the last frame of your sequence. When the last frame is loaded, a variable in the main editor movie (_parent.totalframes) will be increased by one. This is so that we will know when all of our chosen clips in the editor have been loaded properly, and are ready for playback.



```
ifFrameLoaded (10) {
    _parent.totalframes = _parent.totalframes +1;
    gotoAndStop (3);
}
```

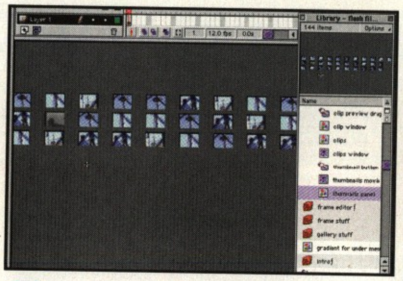
3 On frame 2 add a gotoAndPlay(1) action, then on the last frame add a keyframe in the actions layer and add this code:

```
_parent.nextFrame ();
```

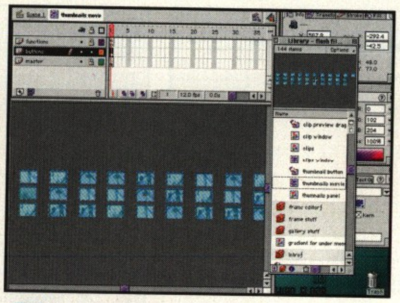
This will advance the playback timeline in the main movie to show the next clip in the sequence when this clip has finished playing. Export this movie as clip1.swf and then do this for all the other clips you want to use, but with the relevant number.

Part 3: Creating the Clip Preview window

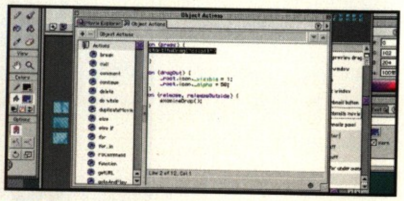
The main feature of the Editing mode is the thumbnail window. You need to use *Photoshop* or *Fireworks* to create small thumbnail versions of the first frame of each clip, then save them into a thumbnail folder…



1 Open the file flashfilmeditor2.fla from the CD and then the Thumbnails panel symbol contained in the Clip Stuff folder in the library. You can see that we've laid out the thumbnails in a row three bitmaps deep. You now need to import, one by one, each of your own thumbnails, deleting ours as you go and adding your own to the layout.



2 Open the thumbnails movie clip in the library. You'll see there is a layer called Buttons, underneath which is your Clip Thumbnails panel. These buttons trigger the code that dictates what thumbnail is added to the editor timeline, and what appears in the Preview window.



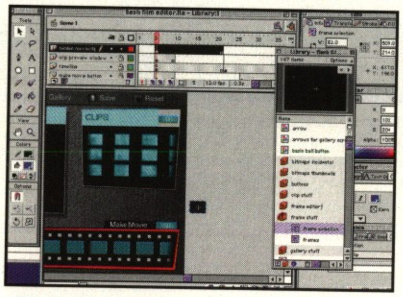
3 Select the button at the far top left and use CTRL+Alt+A /Command+Opt+A to open the Object actions for this button. When the button is pressed it triggers a function called startTheDrag(). When we call this function we need to pass to it the correct clip number for this clip. So in this case it calls:

startTheDrag("clip1")

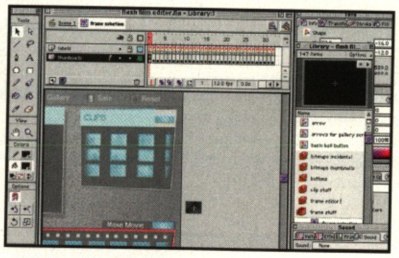
Add the correct number of buttons as necessary for each thumbnail, with the correct parameter for each button (clip2, clip3, clip4 and so on).

Part 4: The dragged icon

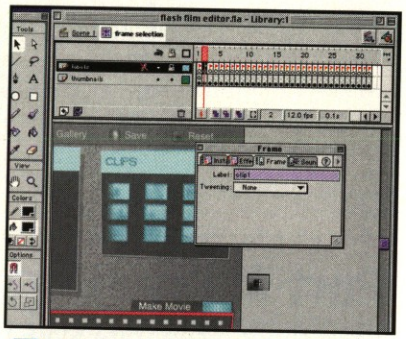
Our clip preview thumbnails are in a masked window, so we need to enable the user to drag them out. But, you only ever drag a hidden movie clip that sits on the outside of the stage, never the actual thumbnails…



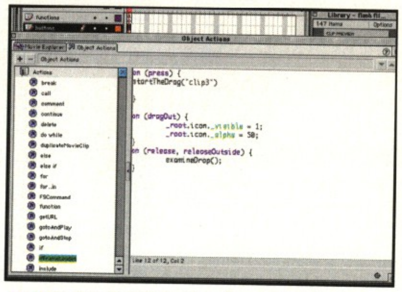
1 On the main stage, unlock the layer called hidden movie clips and select the clip that sits to the right of the stage. This is our secret movie clip that contains all the thumbnails in our editor. When the mouse is clicked on a thumbnail in the Preview window, this clip jumps to the mouse position and the relevant thumbnail is shown.



2 Double-click this movie clip to open it up for editing. You'll see that each thumbnail is laid out sequentially across the timeline, with the addition of a blank frame, which is actually just a black box. This is important, because not only is this movie clip used for the dragging, it's also used in the keyframe positions in the editor timeline. Without this black box you wouldn't be able to detect the drop target on a blank frame.

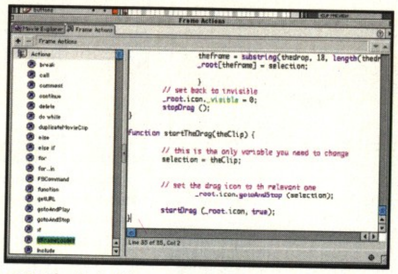


3 Lay out all your thumbnail bitmaps in the correct order, starting at frame 2. Make sure the frame labels match the correct clip number. So for instance, frame 2 has the label "clip1" (no spaces) and so on.



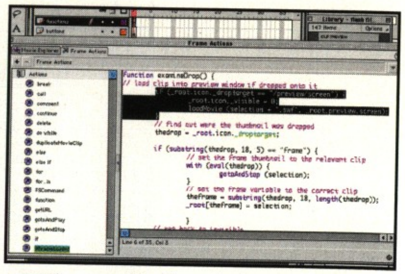
```
on (press) {
startTheDrag("clip3")

}

on (dragOut) {
        _root.icon._visible = 1;
        _root.icon._alpha = 50;
}
on (release, releaseOutside) {
        examineDrop();
}
```

4 You'll notice that rather than add a lot of individual code to each button, we've instead triggered functions when the button is pressed and when it's released. The advantage of this, is that we only need to make amends to one core piece of code (the functions) if we want to change something or add extra functionality.



```
                        theframe = substring(thedrop, 18, length(thedr
                        _root[theframe] = selection;

                        }
        // set back to invisible
        _root.icon._visible = 0;
        stopDrag ();
}

function startTheDrag(theClip) {

        // this is the only variable you need to change
        selection = theClip;


        // set the drag icon to th relevant one
                _root.icon.gotoAndStop (selection);

        startDrag (_root.icon, true);
}
```

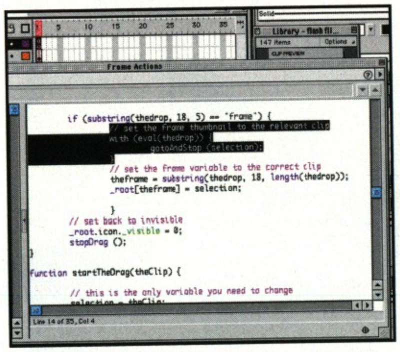
5 The first of these two functions, the one called startTheDrag(), sets the selection variable to the value that we pass it through the function call. We then use this selection variable to set the icon movie clip on the main stage (our hidden movie clip) to go to the label that matches the value of selection. Finally, we start the dragging action for this same movie clip.



```
function examineDrop() {
// load clip into preview window if dropped onto it
        if (_root.icon._droptarget == "/preview/screen") {
                _root.icon._visible = 0;
                loadMovie (selection + ".swf", _root.preview.screen);
        }
        // find out were the thumbnail was dropped
        thedrop = _root.icon._droptarget;

        if (substring(thedrop, 18, 5) == "frame") {
                // set the frame thumbnail to the relevant clip
                with (eval(thedrop)) {
                        gotoAndStop (selection);
                }
                // set the frame variable to the correct clip
                theframe = substring(thedrop, 18, length(thedrop));
                _root[theframe] = selection;

                }
```

6 The second function called examineDrop() is executed when the mouse is released and the icon clip has stopped being dragged. This has to work out where the clip has been dropped. The first 'if' statement looks at the _droptarget property for that clip. If it contains the string "/preview/screen" then it's been dropped on the Preview window, so we load the relevant clip into the window.

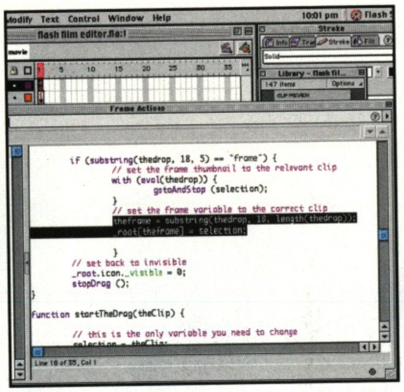
Part 4: The dragged icon continued...



```
        if (substring(thedrop, 18, 5) == "frame") {
                // set the frame thumbnail to the relevant clip
                with (eval(thedrop)) {
                        gotoAndStop (selection);
                }
                // set the frame variable to the correct clip
                theframe = substring(thedrop, 18, length(thedrop));
                _root[theframe] = selection;

                }
        // set back to invisible
        _root.icon._visible = 0;
        stopDrag ();
}

function startTheDrag(theClip) {

        // this is the only variable you need to change
        selection = theClip;
```

Line 14 of 35, Col 4

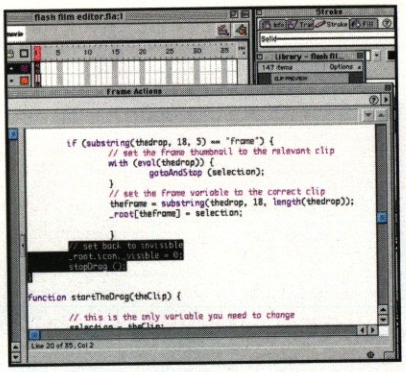
7 Next we see if 'thedrop' variable contains the word 'frame'. If it does we know the movie clip has been dropped on one of the frames in the timeline, and can then use that info to set that frame number to the relevant icon thumbnail. Notice we use the eval function when we target the movie clip using 'with'. This turns any slash syntax that is used in the _droptarget property to dot syntax.



```
        if (substring(thedrop, 18, 5) == "frame") {
                // set the frame thumbnail to the relevant clip
                with (eval(thedrop)) {
                        gotoAndStop (selection);
                }
                // set the frame variable to the correct clip
                theframe = substring(thedrop, 18, length(thedrop));
                _root[theframe] = selection;

                }
        // set back to invisible
        _root.icon._visible = 0;
        stopDrag ();
}

function startTheDrag(theClip) {

        // this is the only variable you need to change
        selection = theClip;
```

Line 18 of 35, Col 1

8 We then set the relevant frame variable to the correct clip number. There is actually a much more efficient way to do this now in *Flash 5* using arrays, but seeing that this is a port of a *Flash 4* version we've left this as it is. You can alter this yourself once you have it working correctly.



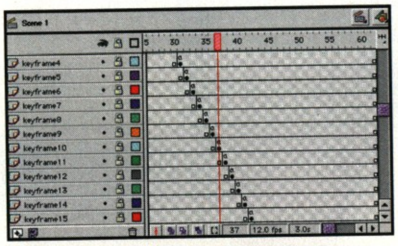
```
        if (substring(thedrop, 18, 5) == "frame") {
                // set the frame thumbnail to the relevant clip
                with (eval(thedrop)) {
                        gotoAndStop (selection);
                }
                // set the frame variable to the correct clip
                theframe = substring(thedrop, 18, length(thedrop));
                _root[theframe] = selection;

                }
        // set back to invisible
        _root.icon._visible = 0;
        stopDrag ();
}

function startTheDrag(theClip) {

        // this is the only variable you need to change
        selection = theClip;
```

Line 20 of 35, Col 2

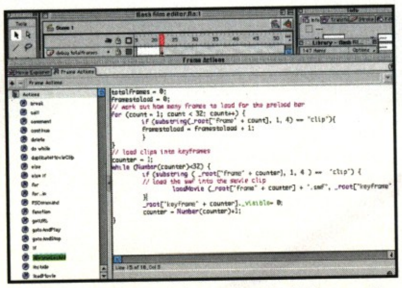
9 Finally, we set the icon movie clip back to invisible so it's hidden again, and then we stop the dragging action. That's it for the main functions. The beauty of the code is that as long as you name your clips correctly, you can have as many or as little of the clips as is necessary without having to alter the core functions.

Part 5: The movie playback

Our Clip Preview window is set up with the relevant thumbnails, and we have our clips setting the relevant variables when they are put into the timeline. The final section is the playback of the movie...

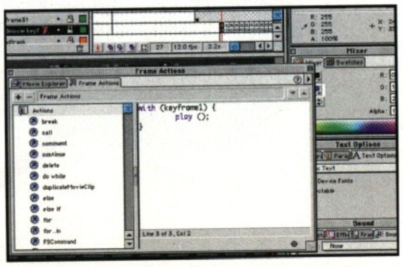


1 You'll see from the source file that each keyframe has a layer all to itself. There were 31 keyframes, so we had 31 movie clips that were just blank place holders for the external SWFs to be loaded into. If we take the first keyframe, for example, this is a 200x150 black box with the instance name keyframe1. It's important that all movie clips are named in this way, as we will automate the loading of each external SWF into these clip place holders.



```
totalFrames = 0;
framestoload = 0;
// work out how many frames to load for the preload bar
for (count = 1; count < 32; count++) {
        if (substring(_root["frame" + count], 1, 4) == "clip"){
        framestoload = framestoload + 1;
        }
}
// load clips into keyframes
counter = 1;
while (Number(counter)<32) {
        if (substring ( _root["frame" + counter], 1, 4 ) == "clip") {
        // load the swf into the movie clip
                loadMovie (_root["frame" + counter] + ".swf", _root["keyframe"
        }{
        _root["keyframe" + counter]._visible= 0;
        counter = Number(counter)+1;
}
```

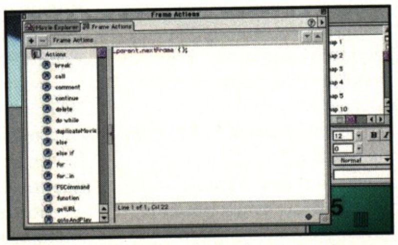
2 When the user clicks 'Make Movie' the movie shifts to the Make Movie label and then goes through some script to work out what SWFs to load into which place holder. It also works out how many frames it actually needs to load so the progress bar can work correctly. When 'totalframes' equals 'framestoload' we know all the SWFs have loaded, so we can then play the movie.



```
with (keyframe1) {
        play ();
}
```

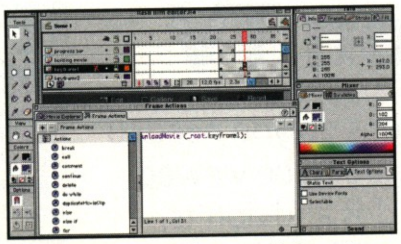
Line 3 of 3, Col 2

3 Once all the SWFs are loaded the playback begins. The playback is controlled by the 'buildmovie keyframes' layer. You'll see that there are 31 keyframes in that layer, each with an action attached. This action executes a play() command on the relevant movie clip. So, for example, the first keyframe tells the keyframe1 movie clip to play. If you need more than 31 keyframes, you'll need to add actions as appropriate.



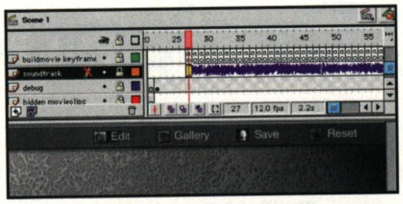
```
_parent.nextFrame ();
```

4 So how does the main timeline know when to show the next external SWF, like the next movie clip? This is all controlled from the clip template that we constructed earlier on. The last frame of this template contains an action that tells the parent movie (which is our editor) to go to the next frame. When this happens, the next external SWF appears on the stage, and the play action from above is executed.



```
unloadMovie (_root.keyframe1);
```

5 On each keyframe layer we added an action which unloads the previous movie clip. When keyframe 2 is playing, the movie unloads keyframe 1, and so on. This is important, because when testing the movie it would occasionally crash on both Windows and Mac – if you unload each subsequent movie, this stops. So, if you are adding more keyframes than the 31 already included, make sure you unload the earlier movie clip.



6 You can add a soundtrack in one of two ways: import a sound into the Soundtrack layer, so when the movie plays you get the sound (though it won't be properly synched); or add the sound into each individual SWF clip. The latter is a better way, but you will increase the download time for each clip. When all your elements are completed, put your clips into the same directory as your newly exported *Flash* film editor. Embed the film editor SWF into an HTML page using *Dreamweaver* or similar, and you're done. ca

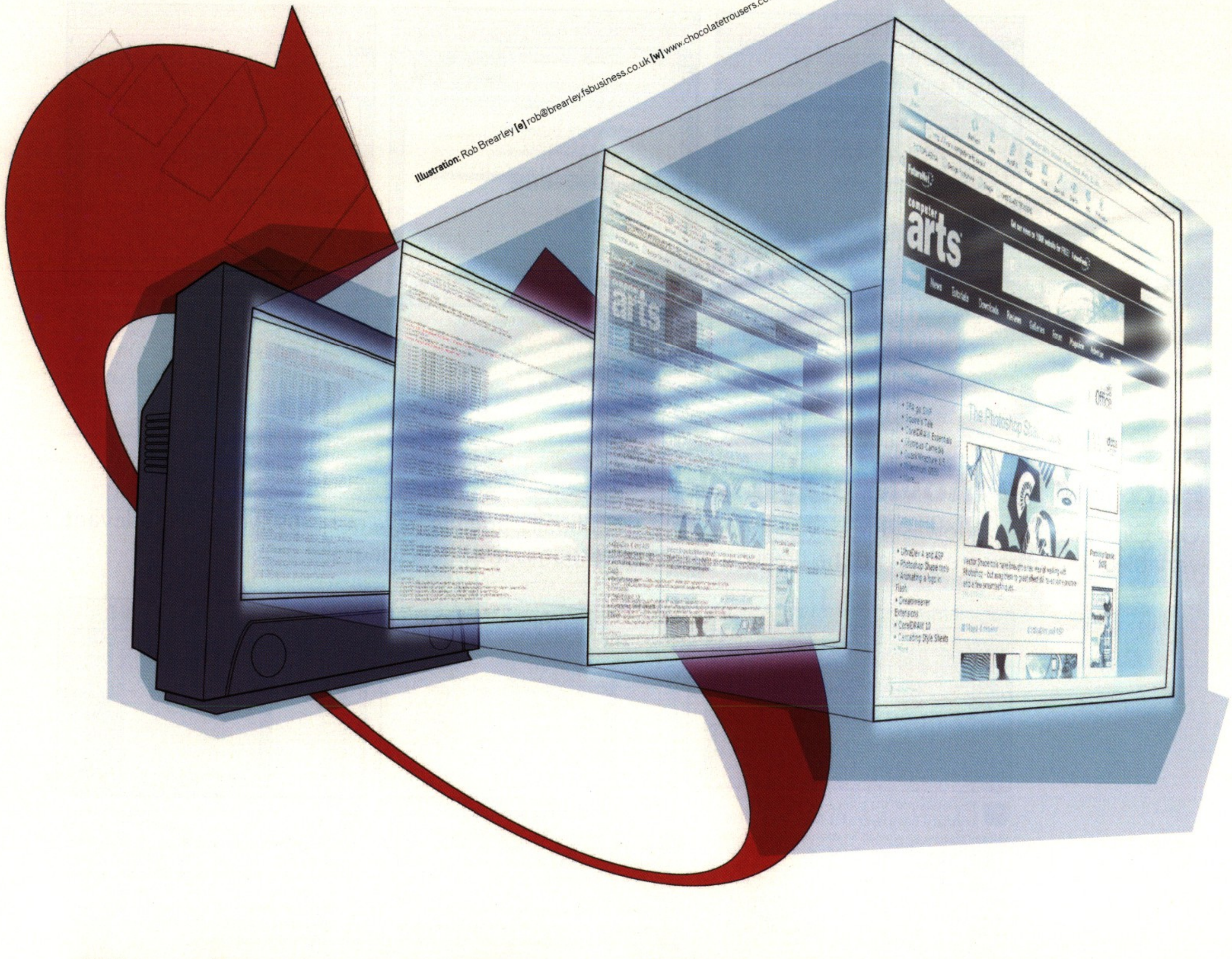


Illustration: Rob Brearley **[e]** rob@brearley.fsbusiness.co.uk **[w]** www.chocolatetrousers.com

Designs on TV

What design considerations do you need to make if your Web pages are to be viewed on TV? We spell out the dos and don'ts, tell you how to avoid the pitfalls that often leave sites unviewable, and provide some essential tips…

Despite the speed at which technology is evolving, the good old cathode ray tube has remained pretty much unchanged for decades. Fortunately, with the advent of digital TV, one of those natty little set-top boxes and a phone line, the Internet can be thrust onto the most revered member of your family. However, anyone who has accessed the Internet on their telly can't fail to have noticed one thing – it's rubbish.

If some Websites can't even be viewed on an 800x600 14-inch monitor running Netscape, what hope is there for Internet TV users? In the following tutorial, we'll highlight the aspects of design you need to focus on if your Web pages are going to be viewed on TV. Using *Dreamweaver*, *Photoshop 6* and *ImageReady*, we'll look at conditions that repeatedly wreck the suitability of sites for this medium, causing problems such as chroma crawl, flicker, bloom, bleed and patterning. Use our vital design tips to get your creations on TV, and help advance the Internet's next phase of development…

Tutorial files

You'll find the files you need to complete this tutorial on your CD in the directory named Tutorials\Web skills\Designs on TV.
Expertise supplied by Mark Towse
[w] www.bigimpact.tv [t] 01494 870095
[e] mark@ bigimpact.tv

Part 1: Creating a graphical TV interface

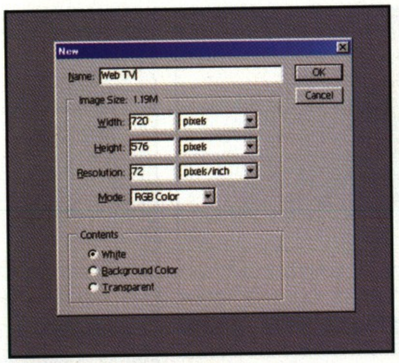
First we'll create our interface, taking into account some common problems like chroma crawl, flicker, bloom, bleed and patterning…

Decoding HTML

Most set-top boxes have some capacity to decode basic HTML, generally version 1 or 2, although these standards are expected to significantly improve as the demand for better-specced boxes increases.

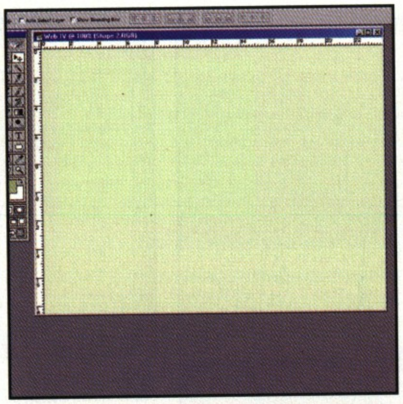
iDTV

The Internet on TV (viewing the Web on your telly) is different to interactive Digital TV (interacting with content using your remote), although the techniques regarding chrominance, layout and design are all relevant for the slowly evolving iDTV phenomena.

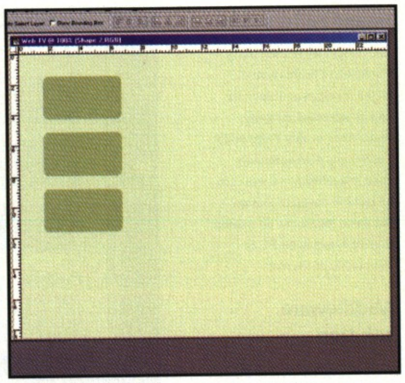


Name: Web TV
Image Size: 1.19M
Width: 720 pixels
Height: 576 pixels
Resolution: 72 pixels/inch
Mode: RGB Color
Contents
● White
○ Background Color
○ Transparent

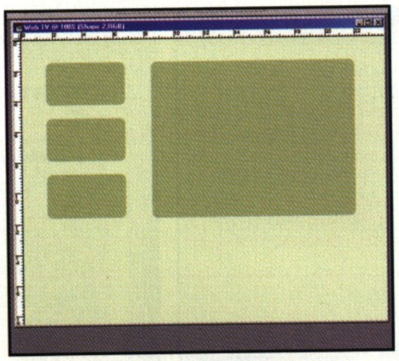
1 The standard size of a PAL TV (the most common format in the UK) is 720x576 – this ensures that all content is seen. Because some screens have a smaller viewable area than this top resolution, we need to make our TV-enhanced Web page smaller. Open and create a new image at 680x526, 72 pixels per inch, and standard screen resolution.



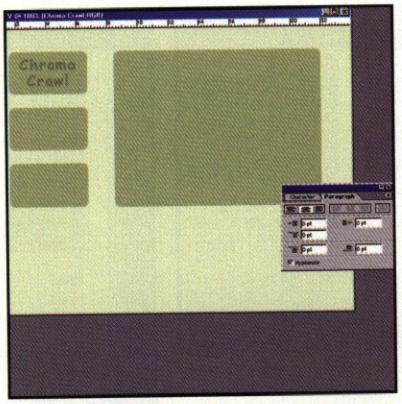
2 When Web pages are going to be viewed on a TV, distinct problems need to be taken into account: chroma crawl, flicker, bloom, bleed and patterning. Fill in the page with RGB values of 244, 244 and 216, or hexadecimal F0F0D8.



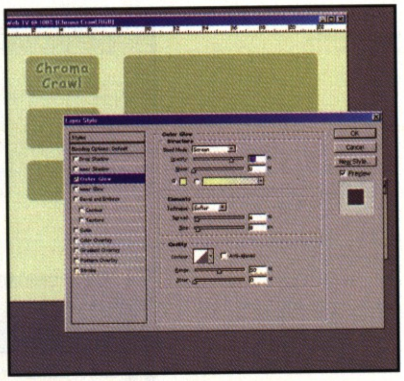
3 We're using this weak beige because colours are always much 'hotter' on a TV set and can really train viewers' eyes. Create a rounded rectangular box and copy it three times along the left-hand side. Make the Fill colour RGB of 190, 190, 137 or hexadecimal BEBE89.



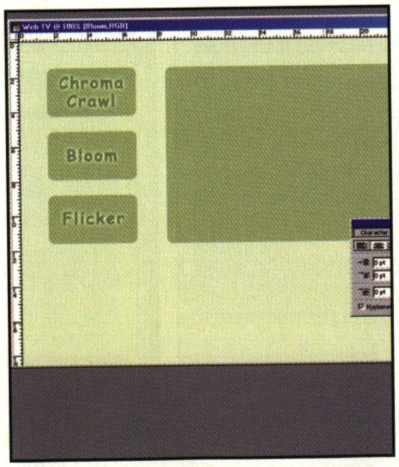
4 So far we've used unsaturated colours for the building blocks of the site. Oversaturated colours (strong colours with high R, G or B values) can lead to chroma crawl, when two contrasting colours are placed next to each other and appear to jiggle. Create a larger rounded rectangular box to the right of the three small ones.



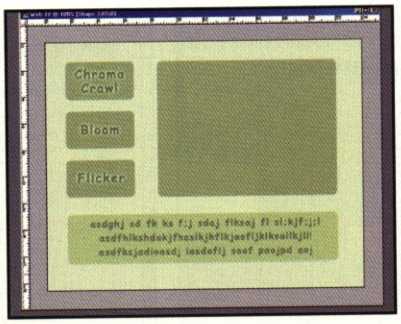
5 Our site is going to display bad design for Web TV, giving you tips on what to watch out for. Using the Text tool, type Chroma Crawl in Comic Sans, size to fit in the top-left rounded box and make the colour slightly darker.



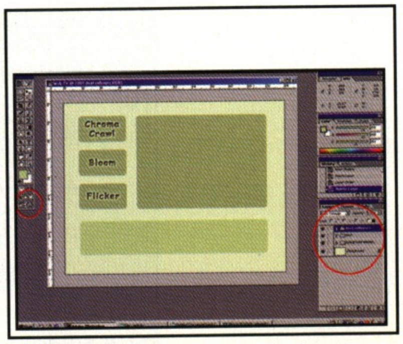
6 Double-click on the Text layer in the Layers dialog, select Outer Glow and set the spread to 6 and the size to 8. This in itself is another method of reducing chroma crawl, as there is now a small faded gradient to diffuse the difference between the text colour and the background box colour.



7 Perform the same operation for the other two boxes, labelling one Bloom and one Flicker.



8 Next we're going to create an area for some text. First position three lines of random letters in a clean typeface like Arial, sized to 18-point on the screen, then draw a rectangular box around it as before. Now delete the text. It's a general rule that all text should be between 18 and 24-point, as your viewers will be between 6 and 14ft away from the screen. Make the box slightly lighter than the other four boxes.



9 Create a darker rollover for each of the three texts on the three side buttons, copy the layer and add inner shadow in the Layer Properties dialog. Click on the *ImageReady* tab – it's time to slice up the page before entering *Dreamweaver*. Now is also be the time to create folders to organise layers – label these text, text rollovers and background elements.

Part 2: Cutting for TV

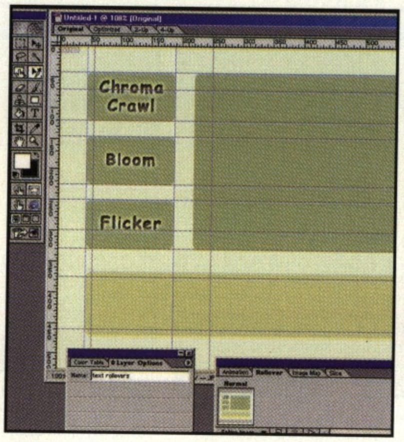
Next, we'll create boxes to house the elements for our Internet-compatible page in *ImageReady*, including some rollover buttons...

Image editors

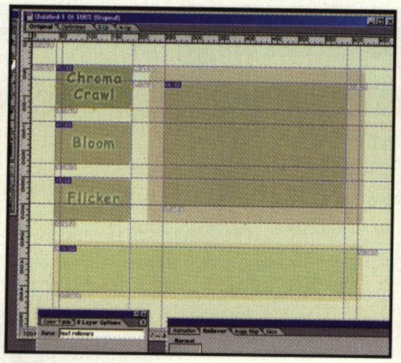
Even though we've been using *Photoshop 6* for this tutorial, all the concepts and methods can be recreated using any reasonable-quality image editor. Equally, you don't absolutely need *ImageReady* – it was used for its time-saving processes. The same results can be created from *Notepad* on the PC or *SimpleText* on the Mac.

Middleware solution

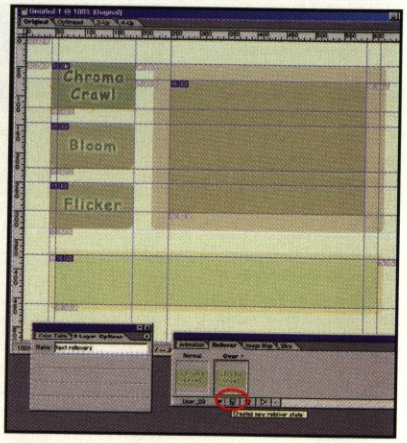
Imagine that your set-top box is like a very early version of *Internet Explorer* or *Netscape*. Basically, there is what's called a middleware solution, a combination of hardware and software which decodes basic HTML and limited JavaScript, enabling it to be displayed on your TV screen.



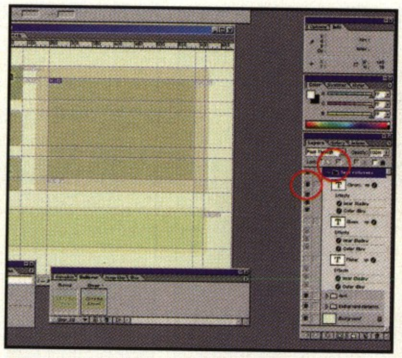
1 Drag rulers to the edges of the three buttons and then drag further rulers slightly inside the other two larger boxes.



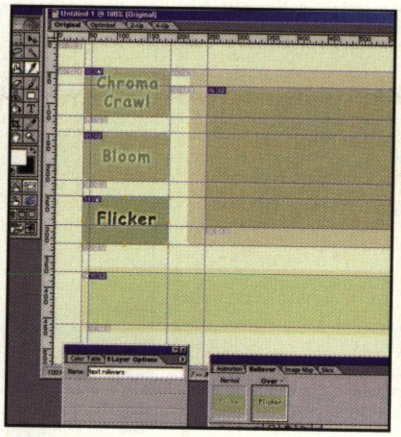
2 Select the Slice tool, then cut along the rulers inside the two large boxes and around the three buttons to create the elements for our TV-compatible Web page. Make sure the slice in the large box is 340x229, as we're going to add some pre-prepared images on the pages which display the evils of bad Internet-for-TV design.



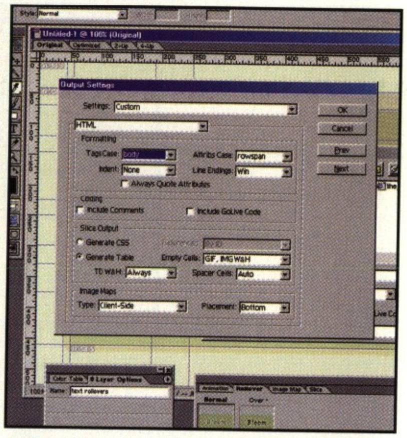
3 Select the first button and you'll see the slice highlight. Click the Create New Rollover State button in the Rollover palette.



4 Select the new rollover state in the Rollover palette. Twirl down the text rollover folder we created in *Photoshop* and make the rollover state visible by clicking the Visible Layer box. You can check how the rollover will look by clicking on the down and up states next to each other in the Rollover palette.

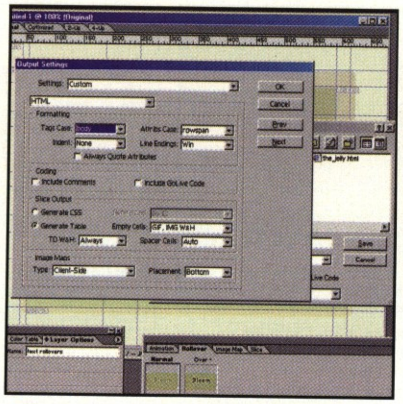


5 Repeat the creation of this rollover for the Flicker and Bloom buttons, making sure to check the rollover has worked after each one.



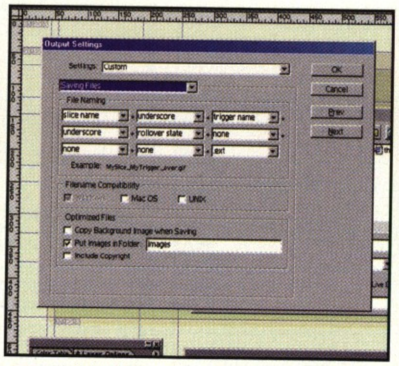
Output Settings
Settings: Custom
HTML
Formatting
Tags Case: body
Attribs Case: rowspan
Indent: None
Line Endings: Win
☐ Always Quote Attributes
Coding
☐ Include Comments
☐ Include GoLive Code
Slice Output
○ Generate CSS
● Generate Table
Empty Cells: GIF, IMG W&H
TD W&H: Always
Spacer Cells: Auto
Image Maps
Type: Client-Side
Placement: Bottom

6 Select Save Optimised As from the File menu and then click Output settings. For the HTML settings, select lowercase for Body and Attributes.



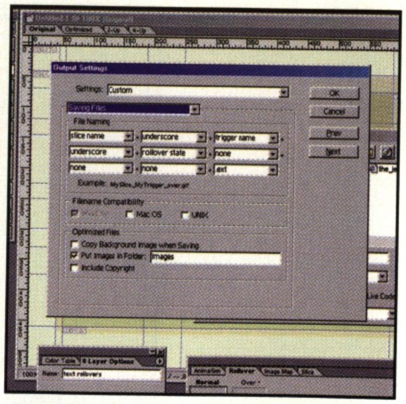
Output Settings
Settings: Custom
HTML
Formatting
Tags Case: body
Attribs Case: rowspan
Indent: None
Line Endings: Win
☐ Always Quote Attributes
Coding
☐ Include Comments
☐ Include GoLive Code
Slice Output
○ Generate CSS
● Generate Table
Empty Cells: GIF, IMG W&H
TD W&H: Always
Spacer Cells: Auto
Image Maps
Type: Client-Side
Placement: Bottom

7 Select Win for Line Endings, set indent to None, unclick Include Comments and make sure GoLive code (which is too complex for set-top box decoding) is unchecked. Set TD (Table DATA) W&H (width and height) to Always.



Output Settings
Settings: Custom
Saving Files
File Naming
slice name + underscore + trigger name +
underscore + rollover state + none +
none + none + .ext
Example: MySlice_MyTrigger_over.gif
Filename Compatibility
☑ Windows ☐ Mac OS ☐ UNIX
Optimized Files
☐ Copy Background Image when Saving
☑ Put Images in Folder: images
☐ Include Copyright

8 Click the Saving Files tab and change hyphen in the first line to underscore. We're altering these names and abbreviations to make sure that the largest number of different manufacturers' set-top boxes can understand the HTML. Making everything lowercase and using underscores instead of hyphens is a simple way of doing this.



Output Settings
Settings: Custom
Saving Files
File Naming
slice name + underscore + trigger name +
underscore + rollover state + none +
none + none + .ext
Example: MySlice_MyTrigger_over.gif
Filename Compatibility
☑ Windows ☐ Mac OS ☐ UNIX
Optimized Files
☐ Copy Background Image when Saving
☑ Put Images in Folder: images
☐ Include Copyright

9 Unclick all of the checkboxes, but keep 'Put images in folder: images' checked. This will remove any extra information that your set-top box may not be able to decode. Leave the slices and background options unchanged. Save as index.html.

Part 3: Building the page

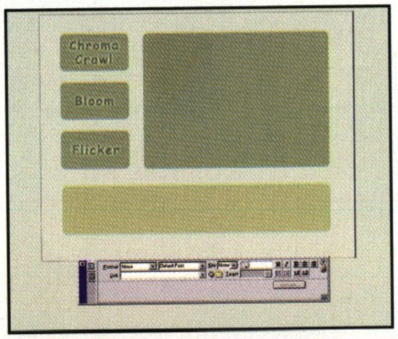
Finally we'll start building our page, adding images and text. Choose your editor carefully though – some will add extra code which may prevent compatibility…

Getting kitted out

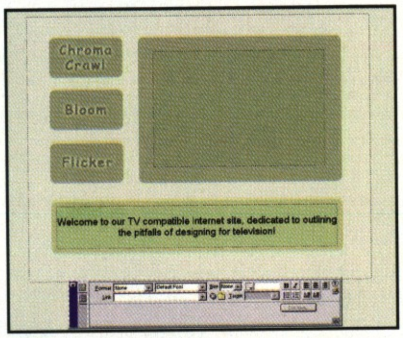
To view your Web creation on TV you'll need a set-top box, a modem connection from your set-top box to your phone, and Internet access provided by your digital TV operator.

Servers

Internet sites compatible with TV do not require any special servers – you can host your creation and call up the correct Web address as you would a standard Web page. Interactive TV is a different matter entirely, with special high-end servers (costing tens of thousands of pounds a time) needed to pump out specially coded content.

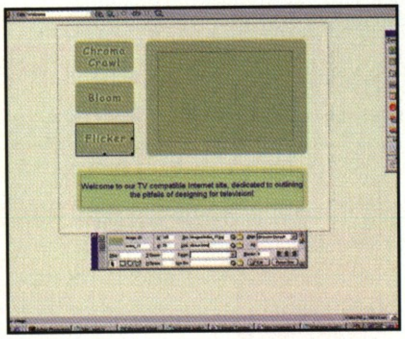


1 Open the file index.html in *Dreamweaver* or whichever editor you use. Preferably do not use *FrontPage* or *GoLive*, as both these packages add unwanted extra code which may prevent compatibility. Go to Modify>Page properties and make the background a hexadecimal colour – the same beige used in *Photoshop*. Delete the two note tags and align to centre.



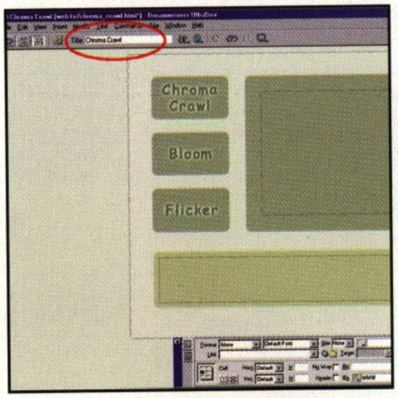
Welcome to our TV compatible internet site, dedicated to outlining the pitfalls of designing for television!

2 Select the two central slices in the two larger boxes and delete them. Then make the table data cell the same hexadecimal colour as the slice was in *Photoshop* – so there's no graphic – and we can add content over the top. Type in this welcome message: 'Welcome to our TV-compatible Internet site, dedicated to outlining the pitfalls of designing for television!'

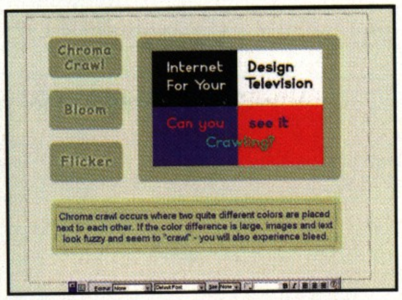


Welcome to our TV compatible internet site, dedicated to outlining the pitfalls of designing for television!

3 In the table data for the text, select align 'horizontal' centre and 'vertical' in the middle. Select the text and make its colour slightly less saturated, with a hex value of 003366 instead of 000000. Add links to files chroma_crawl.html, bloom.html and flicker.html, making sure everything is lowercase and the page links have the extension .html rather than .htm.

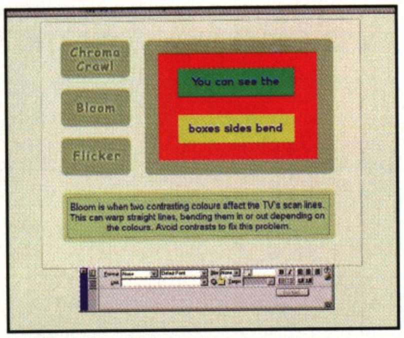


4 Save the index.html file, then delete the text and save the page three times with the same page names as in step 3. Open the page chroma_crawl.html, then name it in the title box at the top of the screen.



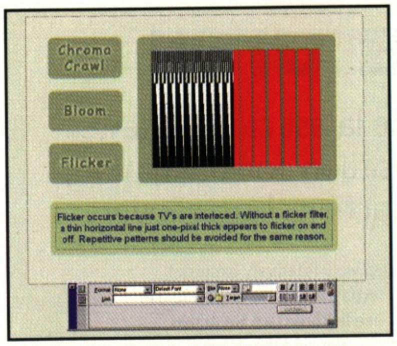
Chroma crawl occurs where two quite different colors are placed next to each other. If the color difference is large, images and text look fuzzy and seem to "crawl" - you will also experience bleed.

5 From the cover CD, place chroma.gif, bloom.gif and flicker.gif into the Website's Images folder. In the central area of the largest box, click on the Image button (or use CTRL+Alt+I), then add chroma.gif and the following text: 'Chroma crawl occurs where two quite different colours are placed next to each other. If the colour difference (chrominance) is large between the two, images and text look fuzzy and seem to crawl – you will also experience bleed.'



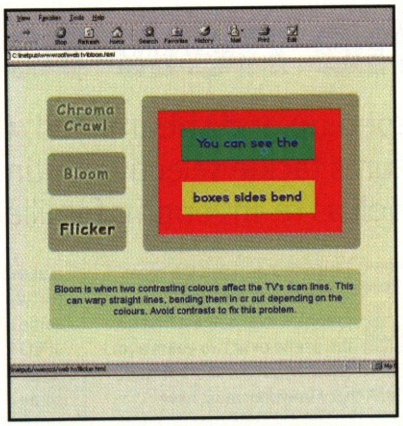
Bloom is when two contrasting colours affect the TV's scan lines. This can warp straight lines, bending them in or out depending on the colours. Avoid contrasts to fix this problem.

6 Open the file bloom.html. Insert the image bloom.gif, showing an example of two contrasting colour walls bending when displayed on a television screen. Insert this text into the text cell: 'Bloom is when two contrasting colours affect the TV's scan lines. This can warp straight lines, bending them in or out depending on the colours. Avoid contrasts to fix this problem.' Save.



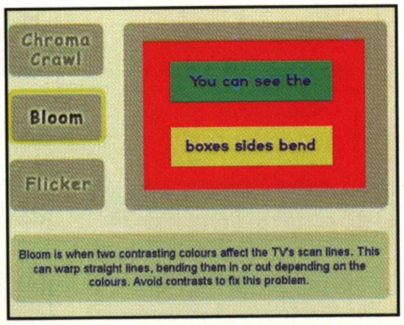
Flicker occurs because TV's are interlaced. Without a flicker filter, a thin horizontal line just one-pixel thick appears to flicker on and off. Repetitive patterns should be avoided for the same reason.

7 Open the file flicker.html. This is one of the most awful to look at, even on a monitor, with thin lines and small repetitive patterns. Add the flicker.gif and the following text: 'Flicker occurs because TVs are interlaced. Without a flicker filter, a thin horizontal line just one-pixel thick appears to flicker on and off. Repetitive patterns should be avoided for the same reason.'



Bloom is when two contrasting colours affect the TV's scan lines. This can warp straight lines, bending them in or out depending on the colours. Avoid contrasts to fix this problem.

8 Now open up the index page and give it a preview in your standard Web browser. This should operate just the same as a very small Web page, with big buttons and horrible pictures.



Bloom is when two contrasting colours affect the TV's scan lines. This can warp straight lines, bending them in or out depending on the colours. Avoid contrasts to fix this problem.

9 Upload to your server and do a Web search for the URL on your Internet TV access. You will see the horror of these design flaws, along with a bevelled yellow box (which varies depending on your set-top box manufacturer) when you select which button you wish to press. The colours will all be more vibrant, and you can see first-hand which conditions to avoid if users are to view your Web content on a digital TV. ca

Online tutorial

You can see the result of this tutorial at [w] www.bigimpact.tv/tv/computerarts. Alternatively, head to [w] www.bigimpact.tv/tv to view the interactive TV demo of our site, with different TV feeds and swappable channels. You can view these via your Web browser, but both URLs have been specifically tailored for TV-with-Web compatibility.

INTERFACE
3.00
4.00

Illustration: Kerry Roper designer/typographer **[t]** 07976 774820 **[w]** www.youarebeautiful.co.uk

Fireworks 4: using the new features

Souped up and streamlined, the latest crop of new features tackle selective optimisation and animation, as well as re-inventing familiar actions like rollovers

Fireworks has ruled the roost in terms of pure Web graphics ever since it first hit the scene over two years ago. With four releases in such a short period, you'd think that *Fireworks* must have already had all the possible functionality squeezed out of it. Hard to believe, but Macromedia has introduced not just workflow improvements but a host of new and exciting (well, relatively exciting) features. Here's a round-up of how to use some of these features like Selective JPEG Optimisation and the Animation functions, and how to get the most out of some of its older but much improved capabilities like creating rollovers and dropdown menus. Once you've got to grips with some of these, you'll wonder how you ever managed without them.

Expertise provided by: Mark Towse
[w] www.bigimpact.tv [t] 01494 870095
[e] mark@ bigimpact.tv
Fireworks 4 is available at: £219 (approx) full package, £129 (approx) upgrade [w] www.macromedia.com/fireworks for more details.

Files on disc

The files for this tutorial are in the Tutorials\Web skills\Fireworks folder on the coverdisc. You'll also find a demo version of *Fireworks 4* in the Applications area of the disc.

Part 1: Selective Optimisation

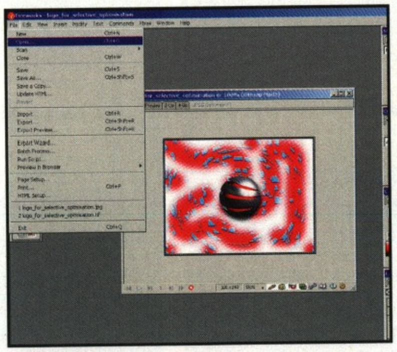
The Optimisation palette enables you to specify quality on elements like buttons and text

Interface

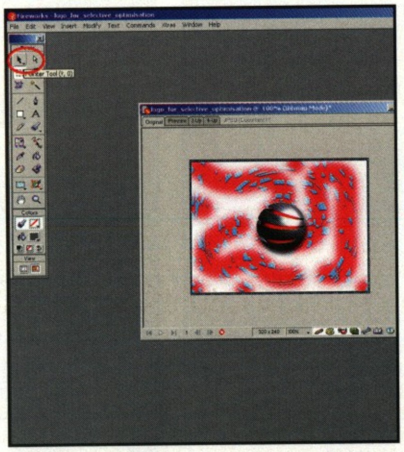
The *Fireworks* interface now closely mimics the interface from *Dreamweaver*, *Dreamweaver UltraDev* and *Flash*. Macromedia is attempting to reduce the amount of different interfaces programmers and coders have to work in, and not before time!

All in one

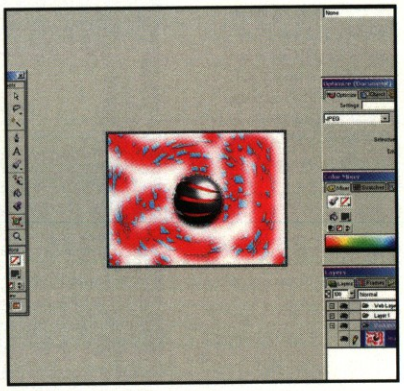
The new version of *Fireworks* has taken onboard the concerns of coders who use *Dreamweaver* and *Fireworks* regularly. Code-heads can now use the enhanced set-up and export of HTML/JavaScript and images to customise automatic file naming, table handling, and other output options, preventing too much in the way of application hopping.



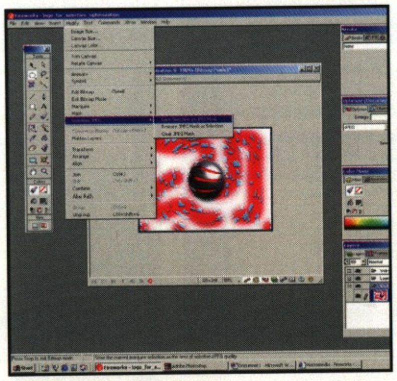
1 Optimising graphics has always been a pain – the inevitable result is quality graphics and massive file sizes or blocky, poor quality graphics and low file sizes. Fortunately, *Fireworks* has a great new Selective Optimisation feature. The above image is not on the coverdisc, as any will do. So choose your image and open it in *Fireworks*.



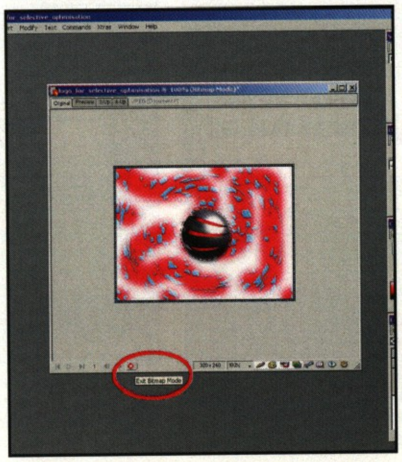
2 The image will open surrounded by a blue border. If not, select it with the Pointer tool.



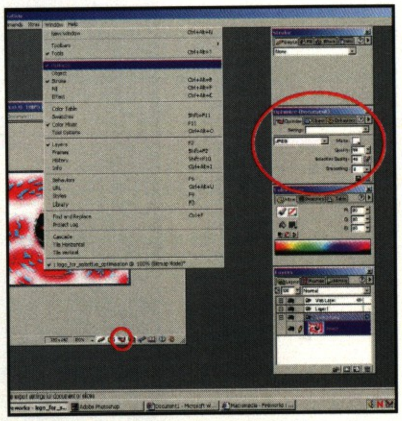
3 Now select one of the Marquee tools. Both Box and Lasso are suitable, but because we want to Selectively Optimise a circular object, we use the Circular marquee. Draw a marquee around the central logo.



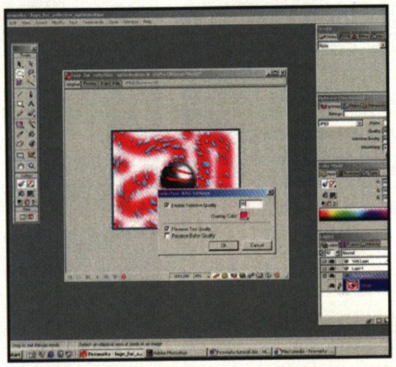
4 In the menus, select Modify>Selective JPEG and select Save selection as JPEG mask. This then saves the selection you have made specifically for use with Selective Optimisation when you later export the image. You should see the selected mask change colour slightly.



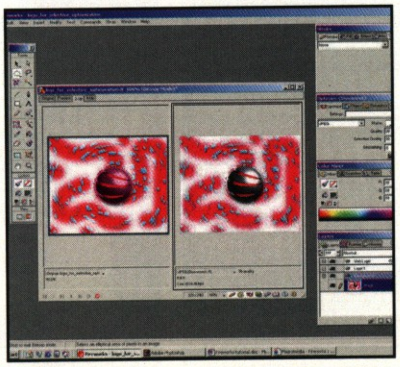
5 Exit Image Editing mode by clicking on the red 'X' at bottom at the image window.



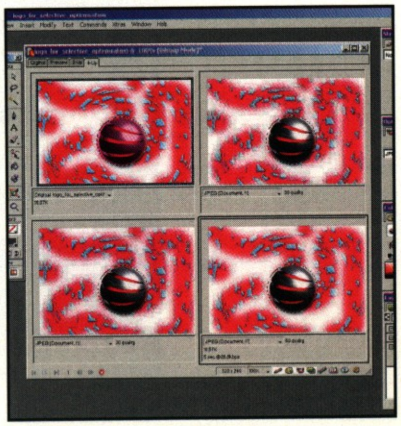
6 Make sure you have the Optimisation palette on screen. If not, click on the Clamp icon at the bottom of the image screen or select Optimise from the Windows menu.



7 In the Optimisation palette, choose JPEG from the Image dropdown menu and select 30 per cent for JPEG quality. In the selective JPEG field, click the icon by the text box. You will now have a new menu. Tick the Enable Selective Quality check box and select 90 per cent for the Selective Quality.



8 The Preserve Button Quality and Preserve Text Quality buttons prevent any loss of quality on specific elements – very useful for slicing complete Websites from graphics for minimum optimisation hassle. Click on the 2-up preview button to see your optimisation.



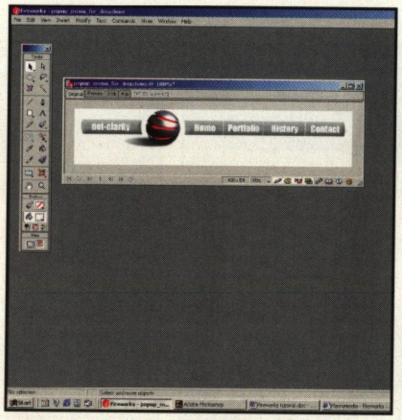
9 You can experiment with different settings and see the differences at the same time with the familiar 4-up option.

Part 2: Building a dropdown menu

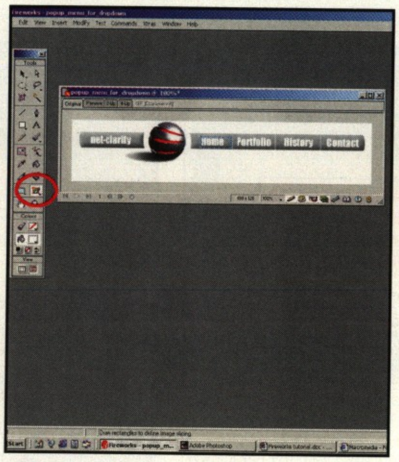
Create great menus in minutes with the excellent pop-up menu creator

In both camps

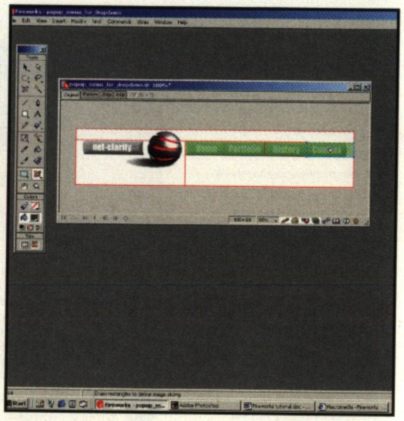
The *Dreamweaver/Fireworks* integration has been greatly overhauled and is now much faster. You can even edit and update HTML and JavaScript code and graphics from *Dreamweaver* while maintaining live editing to your tables.



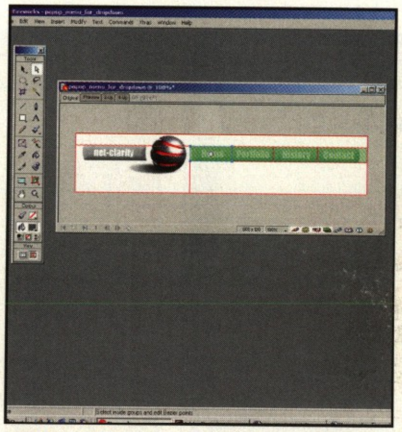
1 *Fireworks* has an excellent pop-up menu creator, which sorts out hours of tedious JavaScript for you. To have a go at this, open the file popup_menu_for_dropdown.psd



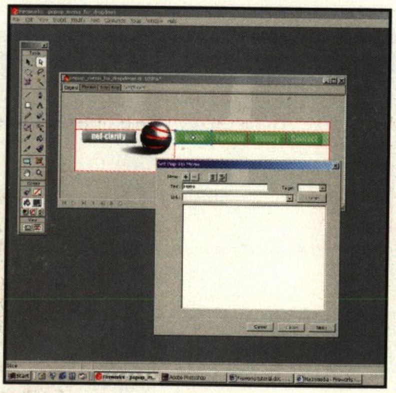
2 Select the Slice tool. We will now cut up the image into rollover slices.



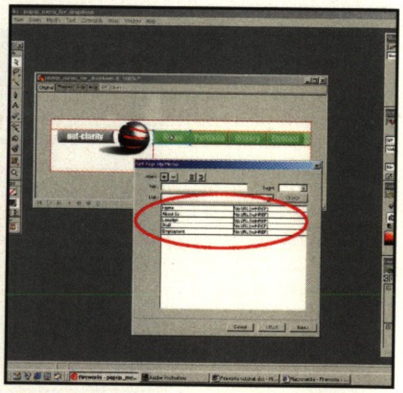
3 Around the four buttons to the right of the main logo, cut four slices. They should now appear green (unless you've changed the default value in your Preferences).



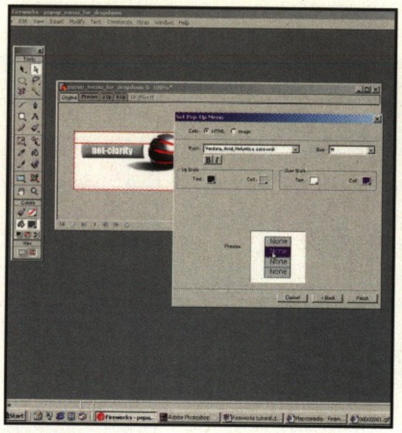
4 The currently selected slice is shown with a mini cross-hair over it. Select the Home button.



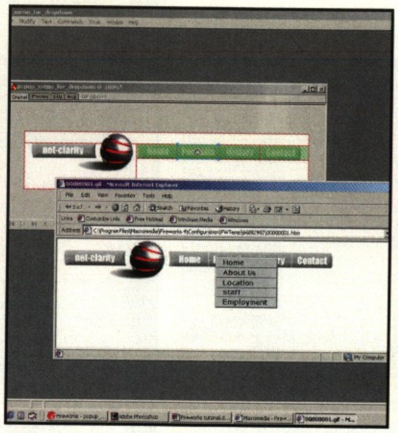
5 Now choose Insert>Pop-up Menu and a new dialog box will appear. Type 'Home' into the first text box, then click the '+' symbol. 'Home' then appears in the area underneath.



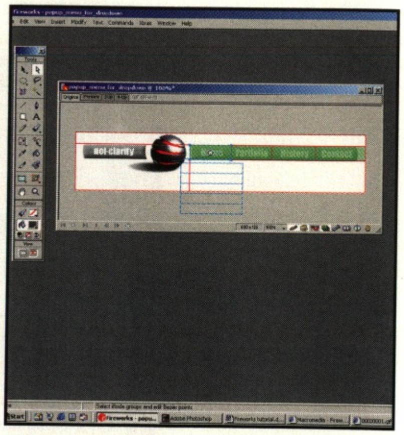
6 Continue for the remaining elements of the dropdown menu. Under the Home button, we have 'Home', 'About Us', 'Location', 'Staff' and 'Employment'.



7 In this example, we aren't creating a linked navigation system, but you can specify your hyperlinks from this dialog box. It's also possible to select one of the Frame Target options if you are using frames. Now click Next.



8 Select your options for the dropdown elements you have just created. We are going for Verdana, 14 point, Bold. When you have set the rollover colours to your liking, click Finish and then Preview In Browser from the File menu.



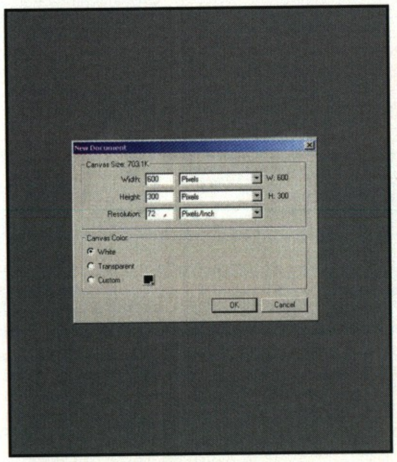
9 Looks good, but we want the menu to be located underneath the relevant button. Simply go to *Fireworks* and reposition the blue ghosted outline. Then select the next button and repeat the entire process.

Part 3: Using the new internal animation studio

Now to create an animated logo using *Firework*'s 'knotted rope' timeline to click-and-drag the symbol

Batch processing

Fireworks has some very nifty built in Actions, similar to *Photoshop* ones. They can save masses of time if used properly, even enabling you to quickly set up and execute batch processes, including commands, with the new step-by-step Batch Processing Wizard.


New Document

Canvas Size: 703.1K

Width: 600 Pixels W: 600

Height: 300 Pixels H: 300

Resolution: 72 Pixels/Inch

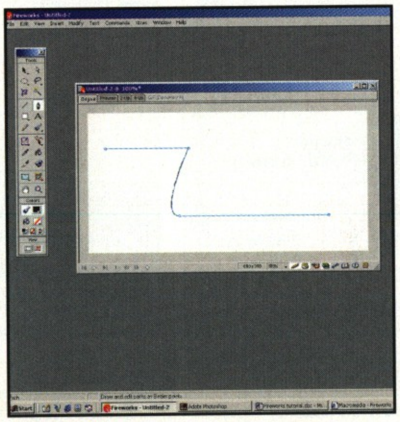
Canvas Color

● White

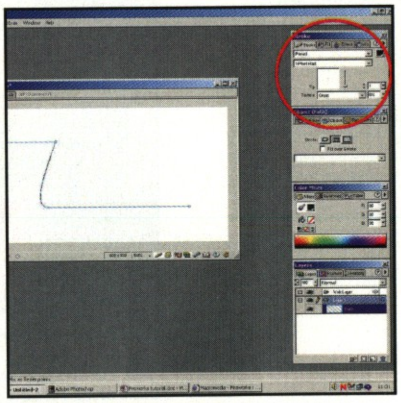
○ Transparent

○ Custom

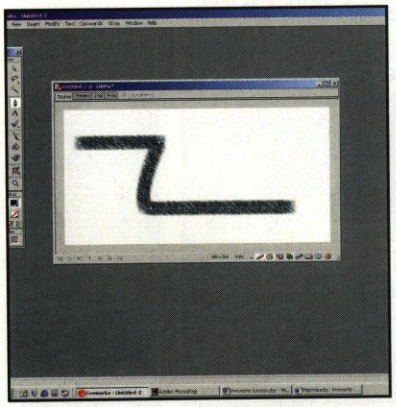
1 Create a new blank file and make its dimensions 600x300 pixels.



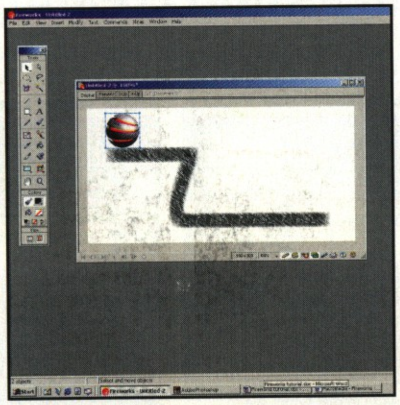
2 Select the Pen tool and draw a shape similar to an elongated 'Z'. The same Bèzier controls from *Flash 5* are used, making it easy to reposition handles.



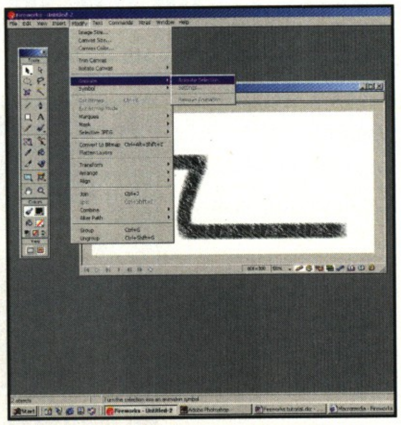
3 We will now be using the Stroke menu to create an environment for a logo to roll along. You can set your own Stroke Parameters and they will appear in real-time as you select. Experiment with a few settings.



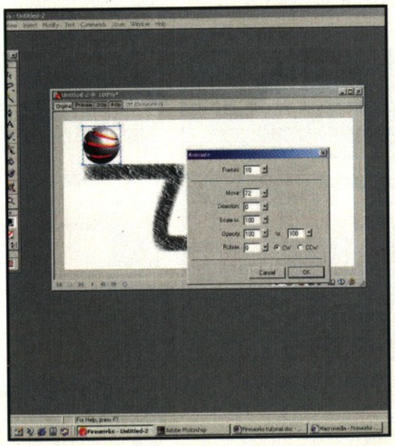
4 My final settings are: Pencil, Graphite, about 40 per cent Edge Strength, 34 Size, Onyx Texture with 90 per cent Opacity.



5 Import the file round_logo_for_navigating.psd (from the cover CD), and position the file on the top-left of the ledge.



6 Choose Modify>Animate>Animate Selection from the main menus.


Animate

Frames: 10

Move: 72

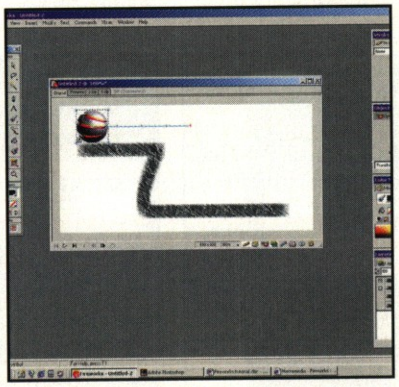
Direction: 0

Scale to: 100

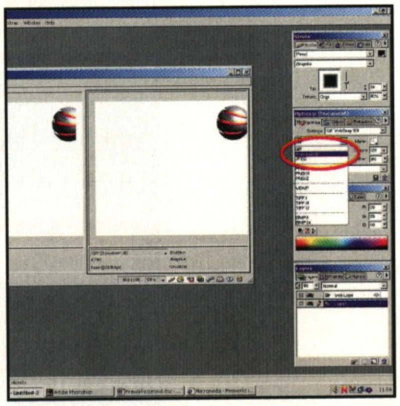
Opacity: 100 to 100

Rotate: 0 ● CW ○ CCW

7 You should get the following dialog box. Select 10 frames, enter move 72 and direction 0 degrees, which will move from left to right.



8 A blue 'knotted rope' will appear. Each knot represents a frame and where the animated object will move. You can click-and-drag the end red knot, enabling you to reposition and fine-tune where the symbol animates to. Now play the animation – your logo should move nicely across the screen.



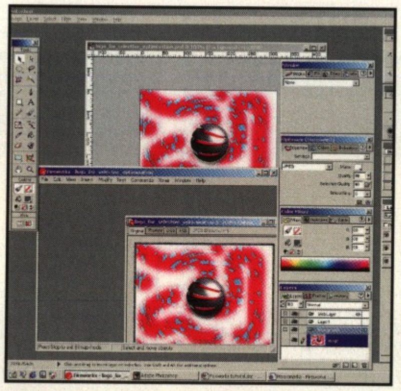
9 From the Optimise menu, change the dropdown box to read Animated GIF instead of GIF, and then Save! You can also choose File>Export and export the animated creation as a Flash .SWF file.

Part 4: Fireworks and Photoshop integration

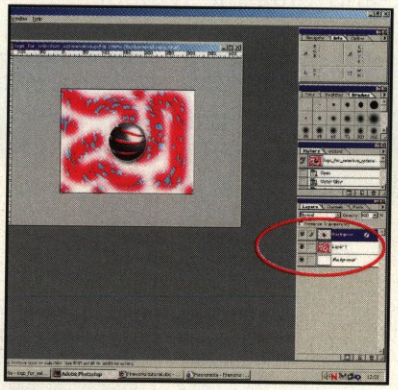
No need to use just one or the other, chuck both into the mix...

Winning act

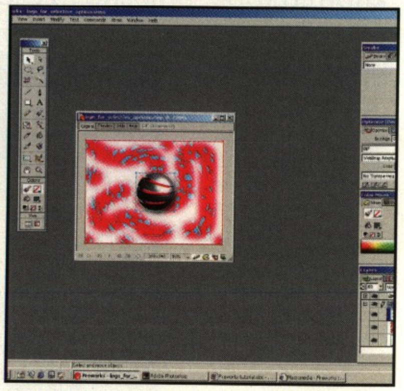
The new versions of *Dreamweaver* and *Fireworks* have attained more top magazine awards than any of their previous incarnations, showing just how ingrained Macromedia software now is in professional Web circles.



1 *Fireworks* is the best program for pure Web graphics but for general image creation, most professionals still use *Photoshop*. Fortunately *Fireworks* now integrates with *Photoshop* more closely than ever.



2 Open logo_for_selective_optimisation.psd (from the cover CD) in *Photoshop*. You can see that we have a background and a logo as the foreground element, with two effects added: Drop Shadow and Outer Glow.



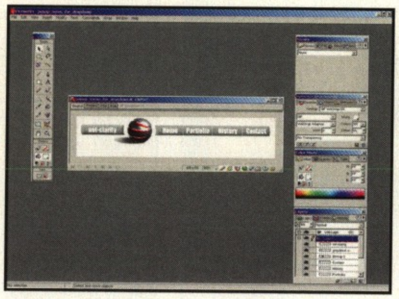
3 Now open the same .psd file within *Fireworks*. Despite the .psd file having native effects added, *Fireworks* has successfully converted the non-rendered effects to a flat bitmap with the same layer structure from *Photoshop*.

Part 5: Slicing images and creating rollover

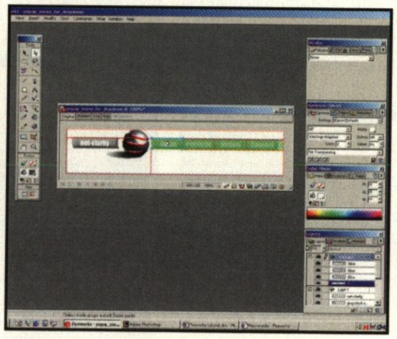
Select your layer, slice, insert a frame or two and click the Simple Rollover button. It's that easy...

WBMP

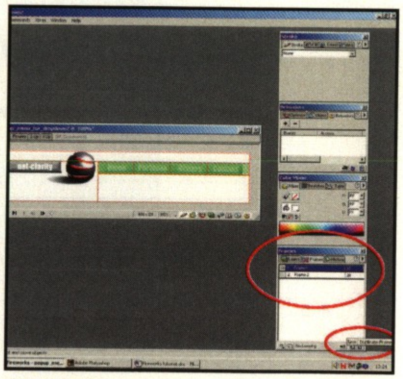
The new version of *Fireworks* can import and export images in the WBMP (wireless bitmap) format.



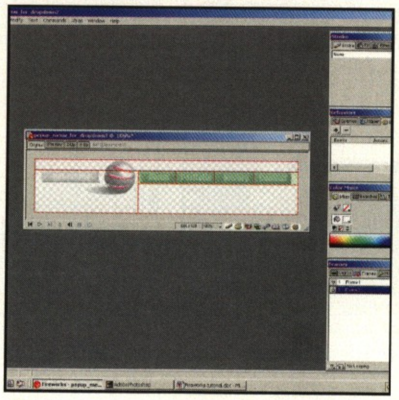
1 We sliced up an image earlier when we created the pop-up menu. However, slicing for rollover images has been souped up for this version. We are now going to use the navigation bar from earlier to create a rollover menu. Open popup_menu_for_dropdown2.psd (from your CD).



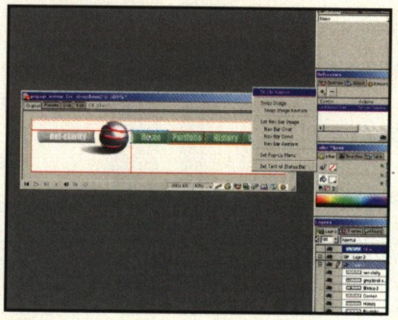
2 Position the text over the buttons to your liking by selecting the relevant layer and nudging with the cursor keys. Select the Slicing tool, as before, and slice around the four main buttons.



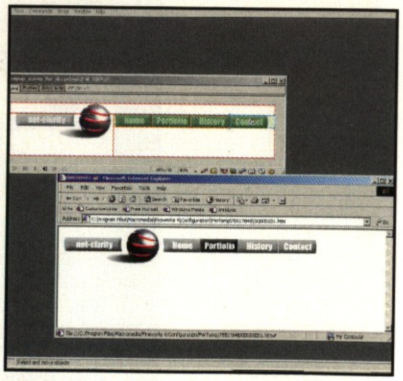
3 Click the Frames tab and click on the Insert New Frames button.



4 Your screen will now look like this, a ghosted version of what you just had on the screen. Click on the first frame and then the Layers tab.



5 Select everything from layer 1, except the Grey Bar layer and Edit>Copy. Then click on Frames, select frame 2 and then paste the layers. Reselect frame 1. Select the first slice, go to the Behaviours menu, and select Simple Rollover. This automatically selects the equivalent Image Slice from the following frame as its rollover image.



6 Do this for all the rollover Image Slices and Preview In the browser from the File menu. You can combine these rollovers with any number of other functions, like the pop-up menus. ca

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Create a tower block navigation

You don't have to spend a fortune on 3D packages to create interactive environments. We'll show you a cheaper and easier way…

One of the most important things that you notice when visiting a new Website is the ease of use. Much of this depends on how deceptively simple the navigation system is. The challenge for designers is to combine intuitive functionality with an element of originality and style. And one way of achieving this is to use a 3D environment as the basis.

The focus of this tutorial is to take the city 3D blocks element from the cover illustration and show you how to create a series of sliding and rising rollovers and buttons. We'll also show how to develop the skills picked up here to create a 3D navigation system.

We've created the 3D elements in this tutorial using the Perspective tool in *FreeHand 9* and a two-point perspective grid. This prevents any 'forced' perspective that might occur when using an application like *3ds max*. With the advent of programs such as *Swift 3D*, it's now a lot easier to make 3D *Flash* animations, but file sizes are often an issue. By using this simpler method to create the city, you'll be able to keep the final animation down to about 9K.

Expertise provided by Bomber Aldridge of twelve:ten. Visit the Website, [w] www.twelve:ten.com or email the team at [e] studio@twelve:ten.com

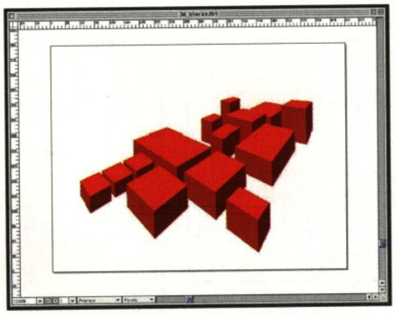
You'll find the tutorial files on the CD in the Tutorials\Web skills\Create a tower block navigation. You can download a 30-day demo of *FreeHand 10* from [w] www.macromedia.com

Part 1: Animating the blocks

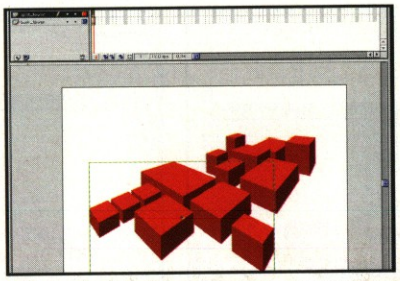
These steps take you through the process of building the animation and rollovers that make up your navigation system

Building elements in FreeHand

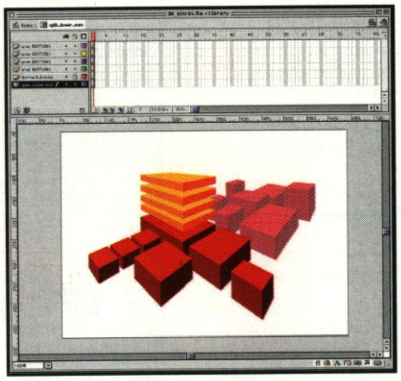
A lot of *Flash* work starts life as vector elements in *FreeHand 9*. Two important tips to remember when creating Web elements to export into *Flash* are to make sure the *FreeHand* document and *Flash* movie have the same dimensions (which saves awkward repositioning later). Also, it's a good idea not to paste anything inside another object because the cropping effect this has in *FreeHand* is lost once taken into *Flash*.



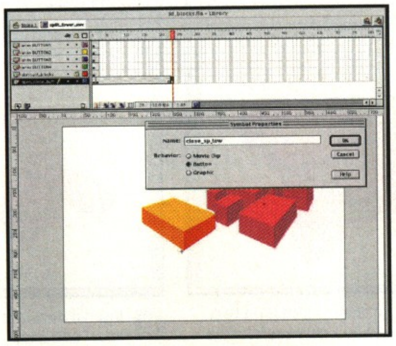
1 Open a new *Flash* movie and set the following properties: 12fps, 640x480 pixel movie size, white background. Import the file blocks.swf on the cover CD. Select the front seven blocks and place on a new layer. Call this layer split_tower and name the other layer back_tower. Select everything on split_tower layer and press F8. Create a Movie clip called split_tower_mov and give it an instance name of split_tower. Double-click on this symbol to edit.



2 Select all the blocks except the one used in the animation and copy to a new layer. Call this layer dormant_blocks, insert frames to 45 and lock the layer. Rename the other layer open_close_button. Select the block on this layer, press F8 and create a button called open_sp_tow. Double-click to edit the new button. Break the objects to fill shapes. Press F6 to put a new keyframe in for the rollover state. Change each facet of the block to the Over state colour, in this case dark orange (FF6600), mid orange (FF9900) and light orange (FFCC00).



3 Return to split_tower_mov and insert a new layer. Import the first stage of the animation's Up state – sp_t_stage1.swf (four orange blocks). Copy these four blocks on to their own separate layer and name them animation button 1 to 4, from the top downwards.

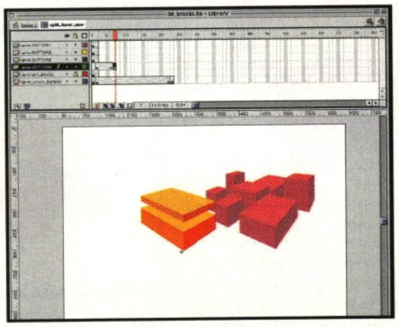


Symbol Properties

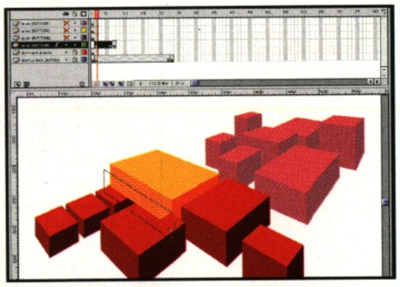
Name: close_sp_tow

Behavior: ○ Movie Clip ● Button ○ Graphic

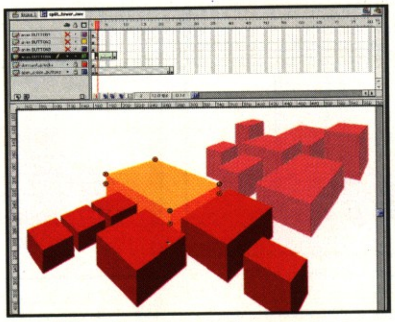
4 Click on the open_close_button layer, keyframe 1 and press F6. Break this block back to fills and change the colours to match the other four blocks and the rollover state of open_sp_tow_button. Insert a keyframe at 24 and make this a new button called close_sp_tow.



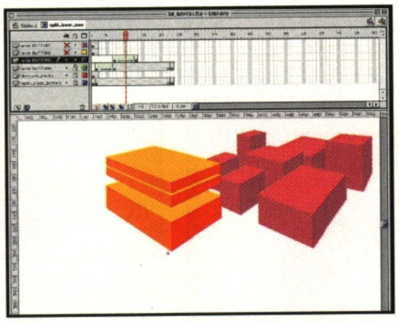
5 Double-click to edit this button as before. This time, the rollover colours are dark yellow (FFCC00), mid yellow (FFFF00) and light yellow (FFFF66). Leave the hit area for now because you'll modify this later. Move animbutton4 layer, keyframe 1 to 2 and break apart. Add a new keyframe to this layer at 7 (five frames on).



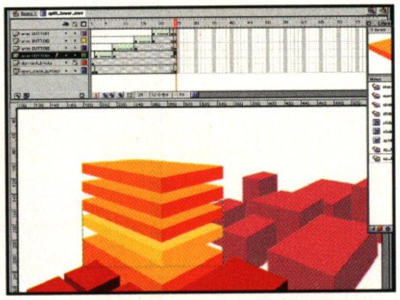
6 At this point, it's easier to hide the top three layers. Copy the orange block from the open_close_button layer and use it to replace the block in the first keyframe on animbutton4 layer. Now lock open_close_layer. Remove enough of the block to give approximately the same dimensions as the other thinner blocks, using the Straight Line Lasso tool (this doesn't need to be too accurate but try to keep with the perspective).



7 Click on the keyframe and create a shape motion tween (to make this smoother, set this tween to 100 per cent easing out). Test. At this point it looks like a new block separated from the large block or a mess of flashing tweening triangles. If this happens, your original *FreeHand* file may have been untidy. Use the shape hints to force the tween to work. To add a shape hint, press Control/ Command+Shift+H, insert a keyframe at 24.



8 Show layer animbutton3 and drag the block keyframe to 13. Copy frame 23 (the final position of block four) in animbutton4 layer to frame 7 (the starting point of block 3) in animbuttons layer and then lock layer animbutton4. Insert a motion tween as before, making sure the start and end position blocks are filled shapes rather than symbols or groups. Test the tween again, adding shape hints if needed.



9 Add keyframe at 24 and copy this shape to the next layer as before, moving each tween five frames on every time. On the final layer, the tween should end on frame 23, so insert another keyframe in 24. You should now have all four blocks rising in sequence. Convert the blocks in keyframe 24 on layers animbutton1 and animbutton4 to buttons sp_tow_button and sp_tow_button4. Set their 4Over state colours to the yellows used in close_sp_tow button.

Part 1: Animating the blocks continued...

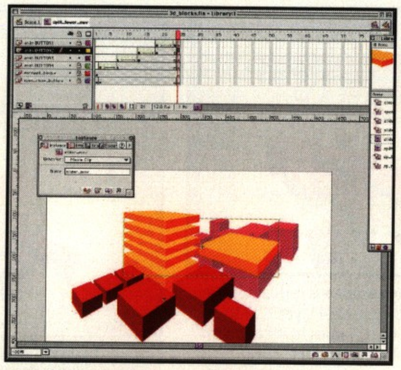
Colour values

For easy reference, here are the colours we're using in this tutorial:

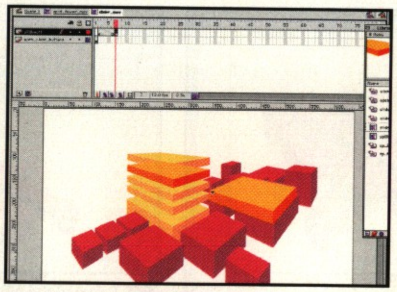
Orange – dark FF6600, mid FF9900, light FFCC00

Yellow – dark FFCC00, mid FFFF00, light FFFF66

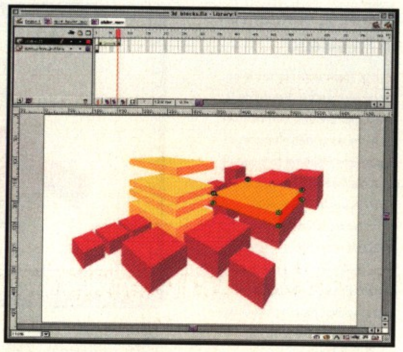
Red – dark 660000, mid 990000, light CC0000



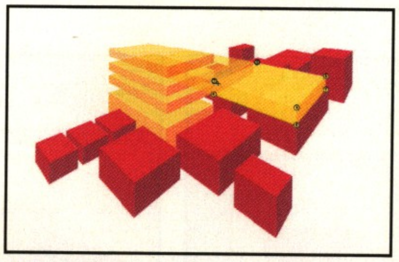
10 On layer animbutton2, import the file sp_t_right.swf. Select both of these blocks and press F8 to convert it to a Movie clip called slider_mov, with an instance name of slider_mov.



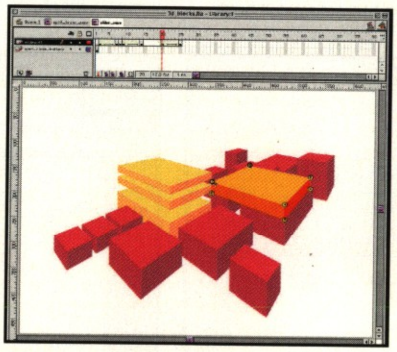
11 Double-click to edit this movie. Copy frame 1, layer 1 into a new layer called slideout1 and move it to frame 2 in the timeline. Name the bottom layer open_close_buttons. Convert the block on this layer to a button called sp_tow_button2, make the rollover the yellow palette and assign the action on mouse press to 'play'. On layer slideout1 add a new keyframe five frames on.



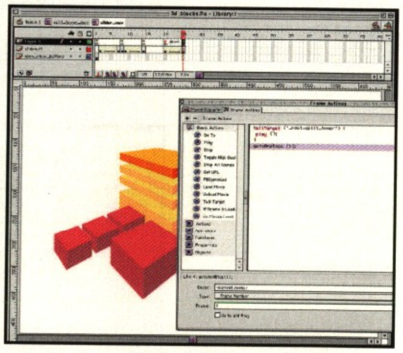
12 Remove the back block in frame 7 and the front block in frame 2. Now change the block in frame 2 for the yellow palette. Insert a shape tween as before, test the tweens and add shape hints as required.



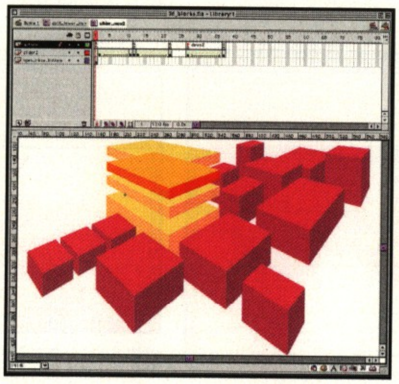
13 As in the split_tower_mov, the block needs a return anim. Eventually this will have two possible closings. So the first return animation, which will be on press of the sliding block is as follows: add a new keyframe in frame 8 and convert this to a button slider1_close_button and an add action 'press, play'. Add another keyframe in frame 9. Break the button back to fills and change its colour to the yellow palette and the final position to the orange palette.



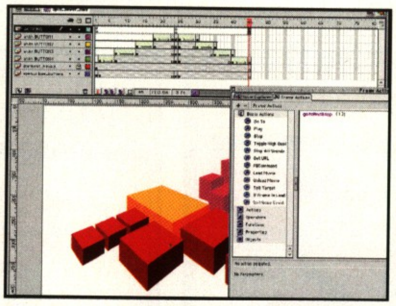
14 For the second return anim (which is on two other button presses) add a new keyframe in frame 20 and copy frame 7 into it. Add a new keyframe in 25 and copy frame 2 into it. Set the tween as before, remembering to set the easing to -100 per cent, and adding hints as needed.



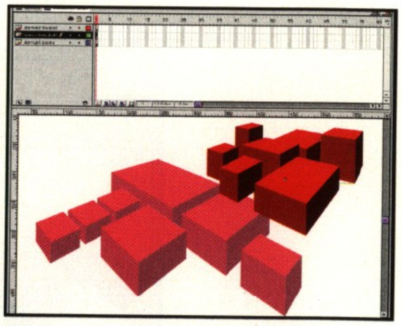
15 Insert a new layer called actions. In frame 1 and 7 add 'stop' action, in frame 14 add 'goto and stop frame1' action, in frame 20 add a label called 'down' and in frame 25 add the action 'tell target_root.split_tower to play' and then 'goto and stop frame1'.



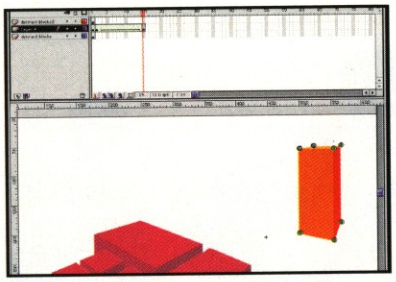
16 Return to split_tower_mov and click on layer animbutton3, frame 24. Import the file sp_t_left.swf. Select both of these blocks, press F8 and convert to a Movie clip called slider_mov2. Repeat steps 14–18, making sure to use sp_tow_button3 for the open button, and slider2_closed for the close button with the frame label down2.



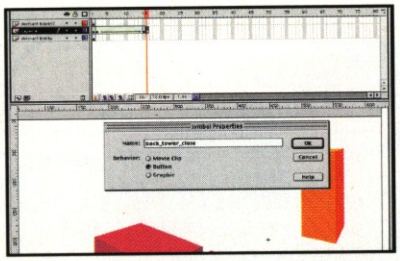
17 Return to split_tower_mov. Insert new keyframes at 25 in all layers, except dormantblocks. Now make the tween anims again, on the animbutton layers. Remember to do these in reverse and in reverse order. Set the easing to -100 per cent, remembering to break the buttons into fills! Break the sp_tow_close button apart in frame 25 and insert frames to the end of the other layer animations. Now insert a new layer at the top called actions. Put in stop actions at frames 1 and 24. In frame 45 put the action 'goto' and 'stopframe1'. This is the split tower animation.



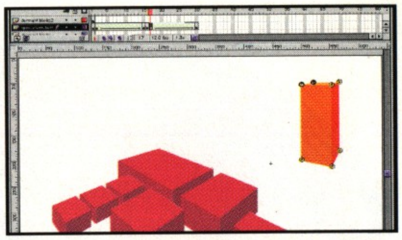
18 Go back to the main timeline in scene 1. Select all on layer back_tower, press F8 and make a Movie clip called back_tower_mov, giving it an instance name of bk_tower. Double-click to edit the movie. Separate the blocks into three layers. Leave the five on the left on the base layer and call this dormantblocks. Insert two layers, name the middle layer open_closebuttons and the top layer dormantblocks2. Copy the back-right block to open_close layer and the final (front-right) block to dormantblocks2.



19 Convert the block on openclose layer to a button named back_open_button with the Over state in the orange palette. Insert keyframe 2 at 15 and import the file bt_active.swf. Tween as before, using hints where needed.



20 Add another keyframe at 16 and convert the block to a button called back_tower_close. Set the mouse press action to 'play'. Add a keyframe at 17 and break back to fills. Copy frame 2 into a new keyframe at 30 and insert a shape tween between frames 17 and 30, with -100 per cent easing.



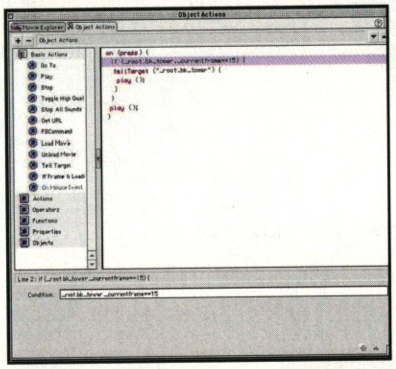
21 Insert a new layer called actions and set the following scripts: frame 1 'stop', frame 16 'stop' and frame 30 'goto and stop frame1'. Return to the main timeline and test the movie by exporting. Now that all the Movie clips are in place and all have instance names, you can add the code to the final movement.

Part 2: Adding the movement scripting

This gives you advanced working buttons that talk to each other

Application of the animation

This animation can be applied to a site in many ways. By using the cityscape from the illustration as a starting point, it forms some kind of interactive map. The other obvious solution is a navigation system based around an actual building. To see this in action, visit our site for Lara Croft creators, Core Design – **[w]** www.core-design.com.

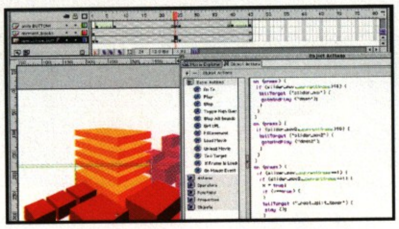


```
on (press) {
  if (_root.bk_tower._currentframe==15) {
    tellTarget ("_root.bk_tower") {
      play ();
    }
  }
  play ();
}
```

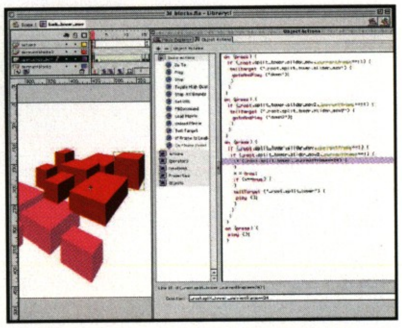
Line 2: if (_root.bk_tower._currentframe==15) {

Condition: _root.bk_tower._currentframe==15

1 Double-click on split_tower_movie and click once on the open_sp_tow button. It already has an action to tell it to play the split_tower_mov on press, but to avoid the blocks being in their Up states together you need to add some more script. Using the 'if' and 'current frame' statements, you can tell the back_tower_mov to close if it is open by using the scripting as above. This tells the back_tower_mov to play if it has played to frame 16 (it's Up state) which closes the tower back down.



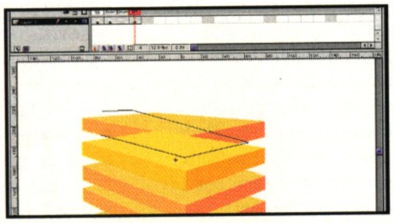
2 Using the same principle, you can close the split_tower_mov if it is open. Click on the close_sp_tower button (frame 24). Because this movie has other movie clips inside itself, you need to assign extra conditions to take their state into consideration. If the first two 'if' conditions say that if either slider_mov is active (such as in frame 11), return it to its Down state. These movie clips also have the script in them to close the main split_tower_mov. When neither of these movie clips are in use, you need to set a final condition to say what happens. This final condition simply says that if both slider movie clips are in their Down state, play the split_tower_mov. By the way, although this script is inside split_tower_mov, it actually sits in the main timeline. This is why it needs the addition of the '_root.' prefix.



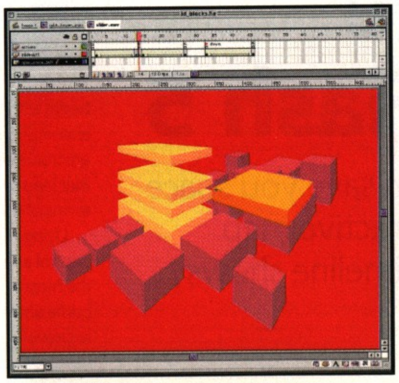
3 Copy all the code you have just used and open back_tower_mov. On the back_tower_button in frame 1, paste all this code into the actions box. With a few quick alterations, this does exactly the same as in the split_tower_mov. The only script that needs to be added tells *Flash* where to find the Movie clips, which can be done by adding '_root.' before each instance name in the conditions. It also needs to tell the split_tower_mov to close if none of the slider clips are in use, but it still is. A single extra clause in the final 'if clause' solves this problem.

Part 3: Final touches

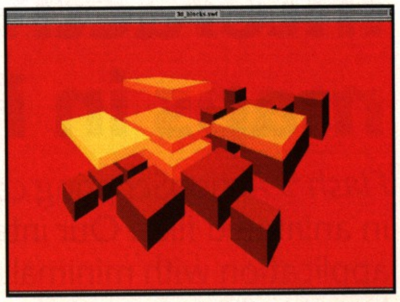
Finish off your animation by giving it a polished look and feel



1 You may have noticed that when you click to open one of the sliding panels, it immediately highlights the button beneath. This can be altered by adjusting the hit areas of the buttons so that none overlap. Double-click the sp_tow_button2 in the split_tower_mov, double-click on the 'hit' keyframe and press 'f6' to insert a keyframe. Now you can remove the overlap using the Lasso tool. Do the same to all other buttons in the tower by making the hit areas more specific. Problem solved.



2 To make the animation smoother, you can insert more frames in the tweens.



3 Finally, you can modify the background colour to one of your choice, in this example CC0033. With a few more actions added to the buttons (for example, 'load movie' or 'get url') and some text, you can create your own custom navigation system. Now it's time to experiment! ca

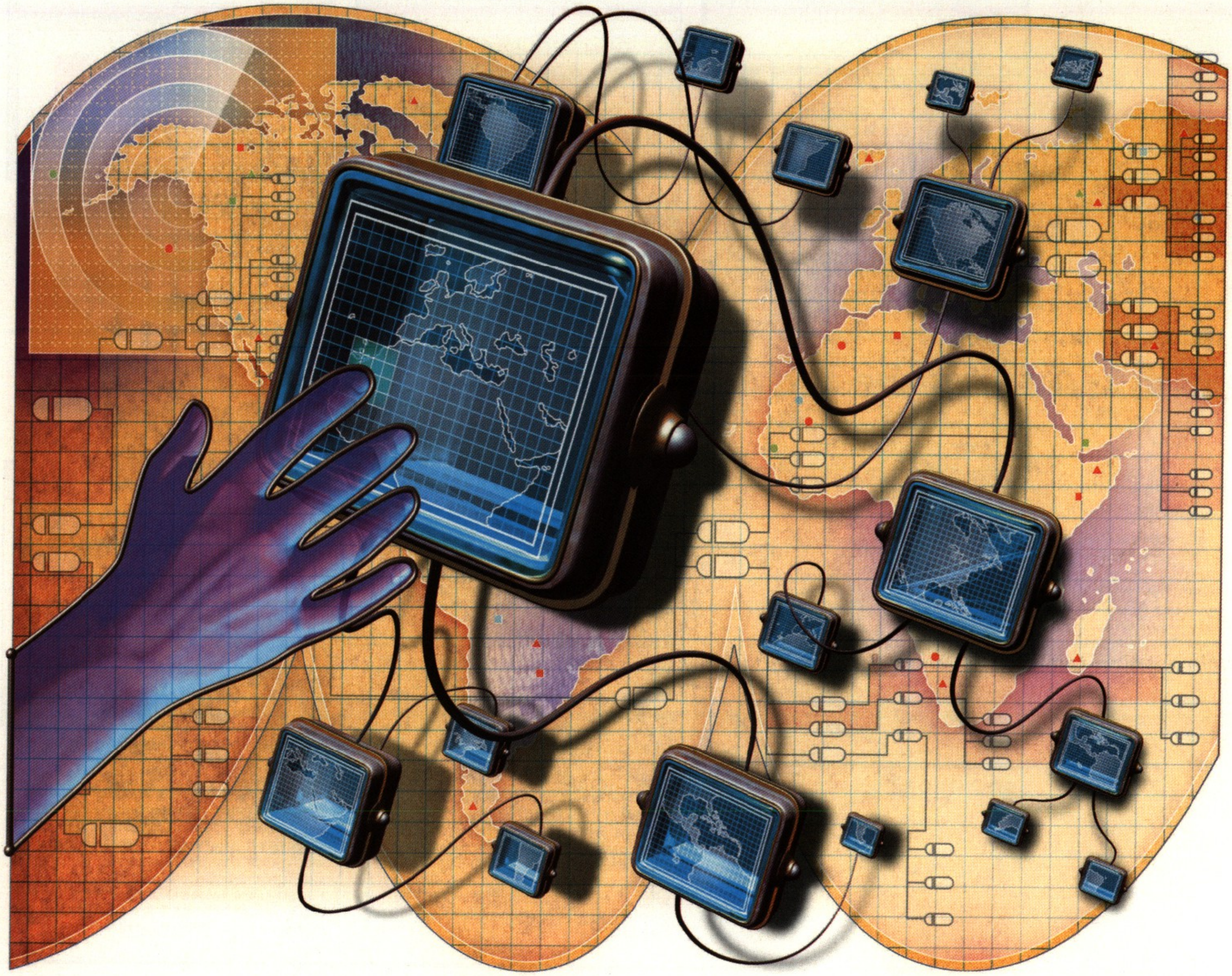


Illustration: Derek Lea **[e]** derek@dereklea.com

Interactive maps in Flash 5

Flash 5 ActionScripting can save you space in animated files. Our interactive map application with minimal timeline shows how it's done…

In Web terms *Flash 5* is now an absolutely essential package, a fact that's reflected in all the advanced features it offers. Primarily a vector animation program to begin with, there are now many ways to accomplish similar tasks within the *Flash* environment. The trick is to find methods that lead to the best results for you, both in terms of file size and functionality.

Using *Flash*'s scripting functions to control animation and interaction is one of the most economical approaches you will come across. And with all the recent improvements to ActionScript, you now have virtually as much control over animation in the Actions editor as you do in the timeline.

In this project we'll be combining different animation techniques, including tweening, frame-by-frame animation and transitions, using ActionScript to create an interactive map of the mainland UK. We'll also take advantage of *Flash*'s pre-built button behaviours to create rollovers that trigger complex animation states.

The published *Shockwave* app takes up around 25KB of Web space, downloading in seconds over an average connection, despite displaying complex behaviour. That's the power of *Flash* ActionScripting…

Demo and tutorial files

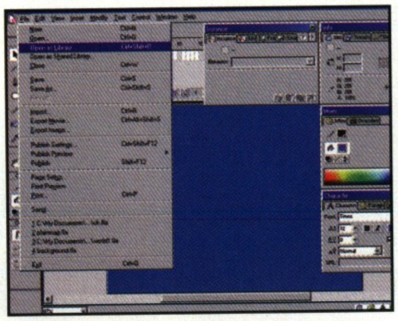
Tutorial support files are in the folder named Tutorials\Web skills\Interactive maps. Expertise supplied by Karl Hodge.

Part 1: Tweening symbols

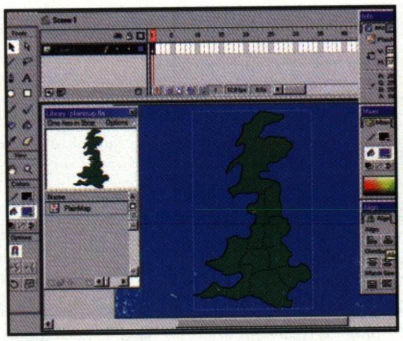
Our map application uses the same symbol several times. We'll start by creating a version of the symbol with tweened animation attached…

Import artwork

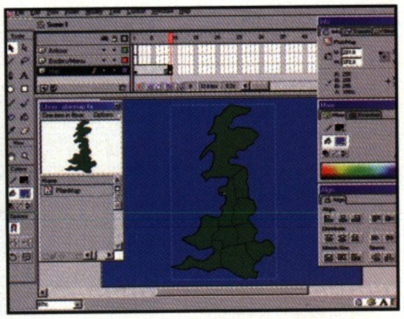
Flash 5 enables you to import artwork from a variety of bitmap or vector sources. The map used in this tutorial started life in Windows Meta File format, and was converted to a *Flash* file for cross-platform compatibility.



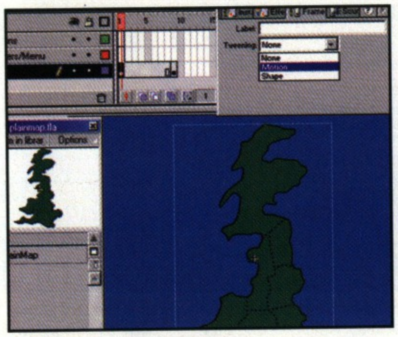
1 With a new document open in *Flash 5*, go to Modify>Movie and set the background colour to a light blue. Next go to the File menu and choose 'Open as Library'. Locate the file plainmap.fla on the cover CD (Dual\Tutorial\FlashSkills) and open it.



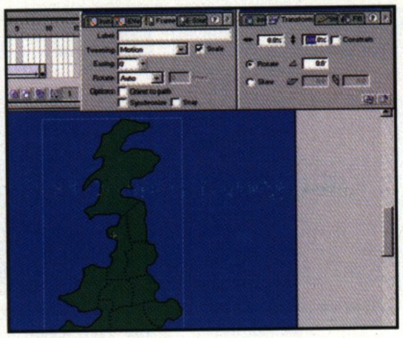
2 In the library, click and drag the graphic symbol PlainMap to the stage. Next, centre it in the document using the Align panel (Window>Panels>Align). Rename 'Layer 1' in the timeline to 'Map'.



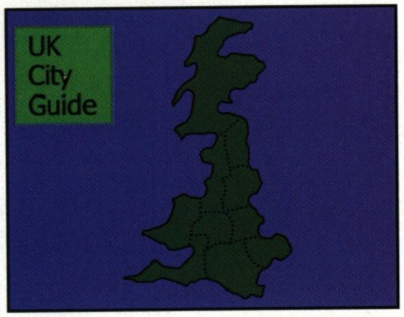
3 Add two further layers to the timeline. Name one 'Actions' and the other 'Borders/Menu'. Make sure that the layer you labelled 'Map' is at the bottom. Now click in frame 9 of the Map layer and go to Insert>Keyframe.



4 Make sure that the Frame panel is open (Window>Panels>Frame), then click on frame 1 of the Map layer. Select 'Tweening: Motion' from the Frame panel dropdown menu.



5 Go to the Transform panel and set the width and height of the map symbol selected on stage to zero per cent. Use Control>Play to verify that the animation tweening has worked.



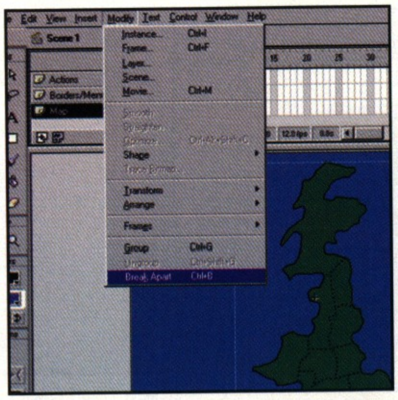
6 In the finished version of the file, we also animated a text label for the application. Using the same motion tweening technique, an alpha value of zero per cent at frame 1 makes the label fade into 100 per cent alpha at frame 9.

Part 2: Artwork from symbols

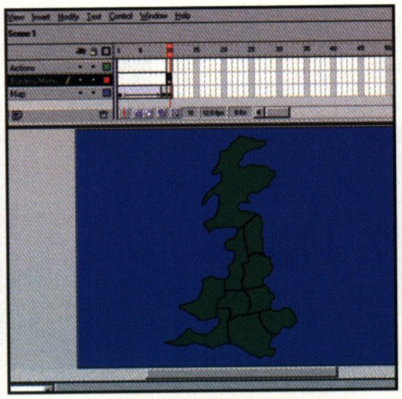
Here we'll customise the original map symbol ready for adding interactive elements…

Nested symbols

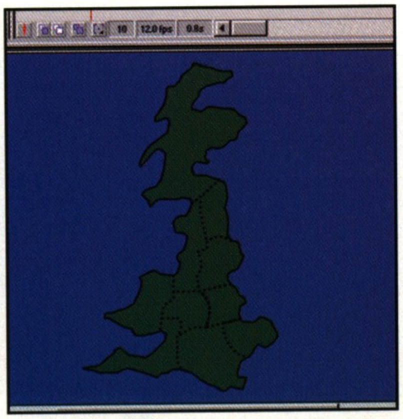
You'll notice that the same graphic symbol is used in this project three times. Re-using symbols, even when they are nested within others, is a good way to keep file sizes down to a minimum.



1 Add new keyframes at frame 10 in each layer. With the map symbol selected at frame 10, go to Modify>Break Apart. This detaches the artwork from the original symbol, enabling you to edit it directly on the main stage.



2 Carefully select the inner border strokes in the map by Shift-clicking on the broken lines. When you've selected them all, go to Edit>Copy. Next, select the keyframe at frame 10 of the Borders/Menu layer. Go to Edit>Paste in Place.



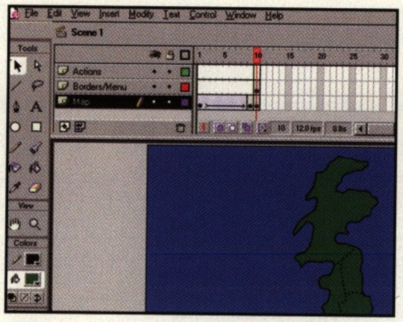
3 Click on a blank part of the stage to deselect. The broken border is now placed on a separate layer above the map artwork. The reason for this manoeuvre will become apparent in the next stage.

Part 3: Adding hotspots

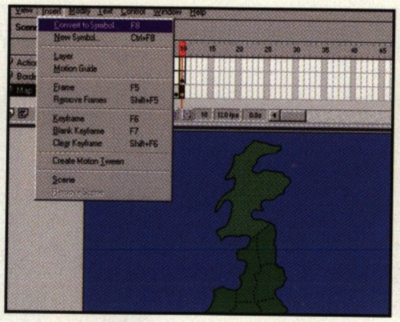
Next, we need to add rollovers to the map using the custom version of the original artwork, and lay the foundations for scripting animation in a movie clip…

Making buttons

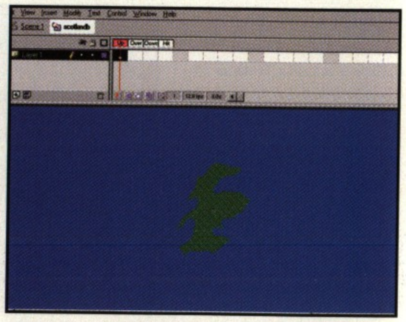
Ensure that you choose 'Button' in the dialog box when you convert the regions. Although you can change the designation of symbols later, a persistent bug means that the internal *Flash* player will still read a movie clip that's been converted to a button as a movie clip.


Scene 1
Actions
Borders/Menu
Map

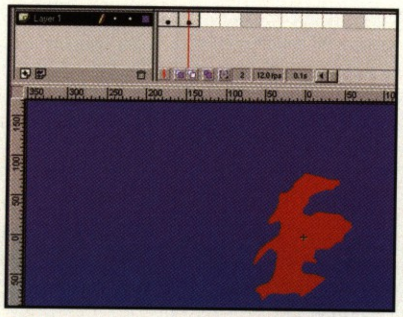
1 Now click in frame 10 of the Map layer to make sure that frame is selected, then click away from the map to deselect the artwork. The technique we're about to employ enables you to create irregularly-shaped buttons.


Convert to Symbol... F8
New Symbol... Ctrl+F8
Layer
Motion Guide
Frame F5
Remove Frames Shift+F5
Keyframe F6
Blank Keyframe F7
Clear Keyframe Shift+F6
Create Motion Tween
Scene

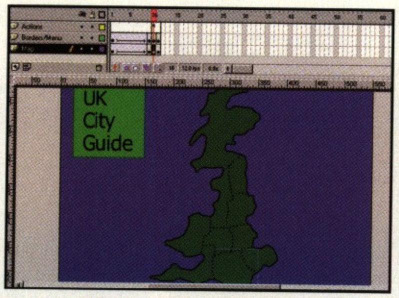
2 Click on the area of the map representing Scotland (if your geography is extremely lousy, that'll be the large section at the top…). A chunk of the map should become selected. Now go to Insert>Convert to Symbol.


Scene 1
scotlandb
Up
Over
Down
Hit

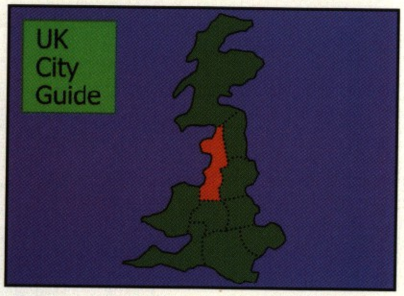
3 In the dialog that appears next, name the symbol 'scotlandb' and choose 'Button' as the symbol type. Now head to the library to see the button in the list, double-clicking on the label to go into Symbol Editing mode.



4 Add a keyframe to the Over frame for the new button. The artwork is automatically copied over. To create the rollover effect, use the Paint Bucket to apply a different coloured Fill to the button at the Over stage.


Actions
Borders/Menu
Map
UK City Guide

5 Repeat the process to create buttons for every region in the map. After Scotland they are (from left to right): North West, North East, Yorkshire, Wales, West Midlands, East Midlands, South West, South East and East. Look at the finished file named ukmap.fla for reference.


UK City Guide

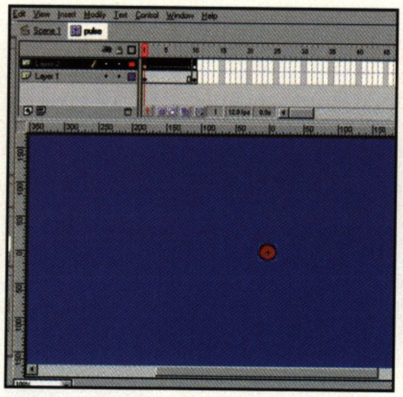
6 Go to Control>Test Movie to check that all buttons work properly before moving on. If you turn off the Borders/Menu layer you'll notice now that the borders in the original image have disappeared in the Map layer – that's why we needed to copy and paste them earlier.

Part 4: Animated buttons

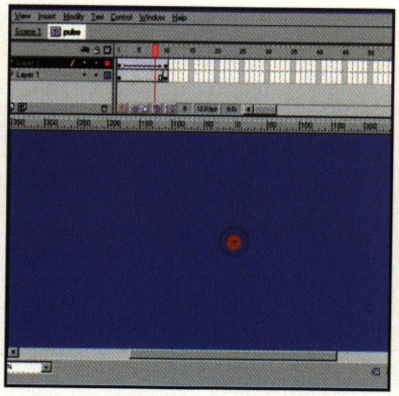
Rollovers are all very impressive, but a little animation can go a long way…

Animation in buttons

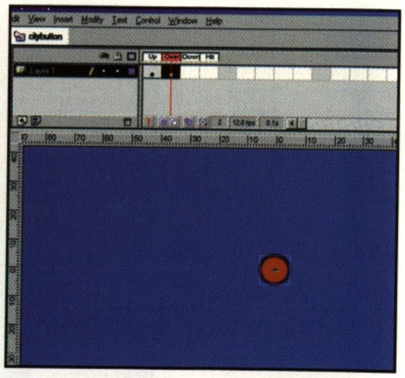
You can control movie clips nested within buttons in the same way that you control any movie clip. Make sure that you give both the button and the embedded clip an instance name first.


Scene 1
pulse
Layer 2
Layer 1

1 Go to Insert>New Symbol and create a new movie clip called 'pulse'. Draw a circle on the stage and centre it over the registration mark. Select the Stroke around the circle and go to Edit>Cut. Use 'Paste in Place' to insert it in a new layer.


Scene 1
pulse
Layer 2
Layer 1

2 Place keyframes at frame 10 in both layers. In layer 2, select the first frame and choose 'Tweening:Motion' from the Frame panel. Select frame 10 in the same layer and use the Transform panel to scale the circle to 150 per cent.


citybutton
Layer 1
Up
Over
Down
Hit

3 Create a new button called 'citybutton'. Draw a circle the same size as the pulse movie clip in the Up frame, then add a keyframe to the Over state. Drag and drop a copy of the pulse movie clip to the stage and centre it exactly. The movie clip animation starts automatically on rollover.

Part 5: Making a movie clip

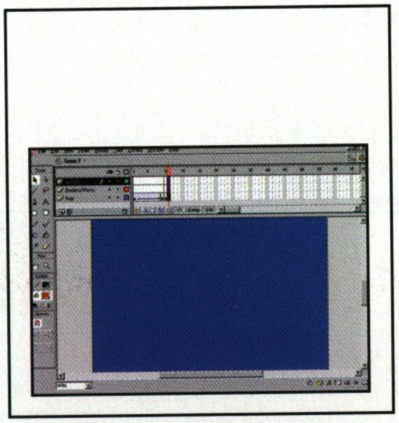
Still using the same map symbol, now as a movie clip, we'll add zoom capabilities to our map using ActionScript…

Alternative to ActionScript

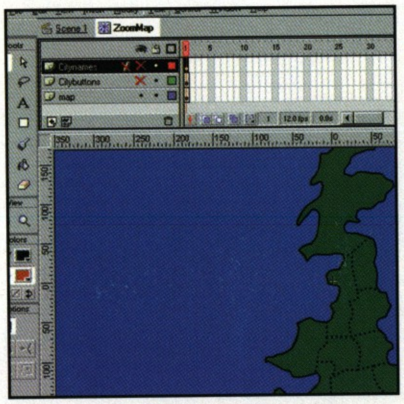
This bandwidth-saving project could be rendered differently, using movie clips to tween the zooming action that results from clicking within the regions. This would require the use of the Tell Target to jump to specific animated points within an instance of an animated clip.

External links

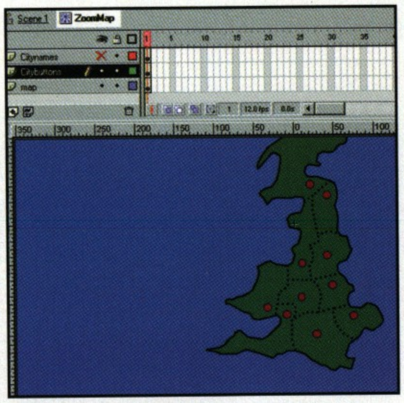
Open the finished *Shockwave* file ukmap.swf in a Web browser or *Flash* player, and you'll notice that the city buttons are live links to locations on the Web. They have 'getURL' actions attached to them that open a Web address in a new browser window.



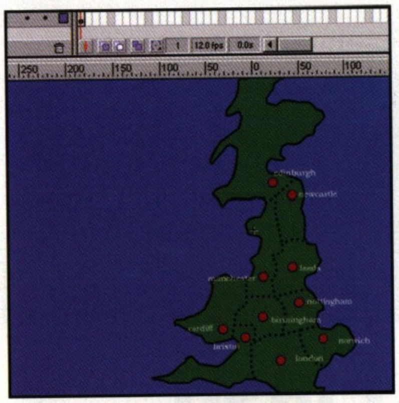
1 Return to the main movie (Scene 1). Insert keyframes in frame 11 of the Borders/Menu and Map layers, but delete the artwork that automatically appears there.


Scene 1
ZoomMap
Citynames
Citybuttons
map

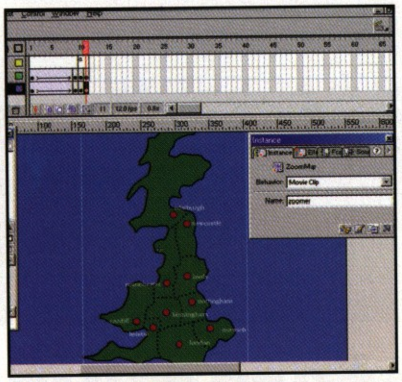
2 Go to Insert>New Symbol and create a movie clip called 'ZoomMap'. Add two additional layers to the movie clip and call the top one 'Citynames', the middle layer 'Citybuttons' and the bottom layer 'Map'.


Scene 1
ZoomMap
Citynames
Citybuttons
map

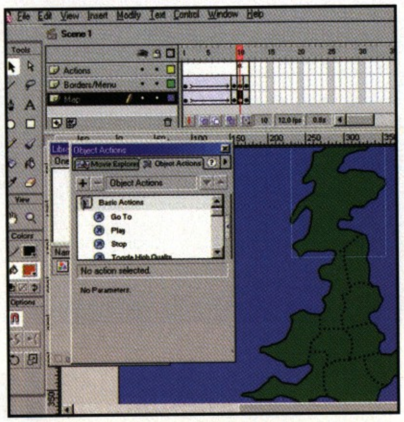
3 Still in symbol editing mode, select the Map layer and drag a copy of the graphic symbol PlainMap to the stage. Centre it exactly. Go to the Citybuttons layer and place one instance of the button in each of the map's regions.


edinburgh
newcastle
leeds
manchester
nottingham
birmingham
cardiff
bristol
norwich
london

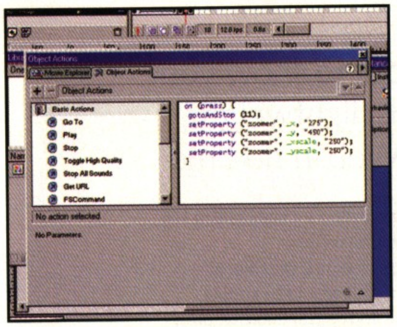
4 Select the Citynames layer, and using a font size of 9 points add text labels for a major city in each region. Refer to the finished file ukmap.fla (or a UK map) for the city names. Make sure the button instances correspond to the labels.


Instance
ZoomMap
Behavior: Movie Clip
Name: zoomer

5 Return to the main movie and drag a copy of the new clip to the stage at frame 11. Name it 'zoomer' in the Instance panel. Select frame 10 in the Actions layer and go to Window>Actions to open the ActionScript editor. Place a 'Stop' Basic action in the layer.


File Edit View Insert Modify Text Control Window Help
Scene 1
Actions
Borders/Menu
Map
Object Actions
Movie Explorer
Object Actions
Basic Actions
Go To
Play
Stop
Toggle High Quality
No action selected.
No Parameters

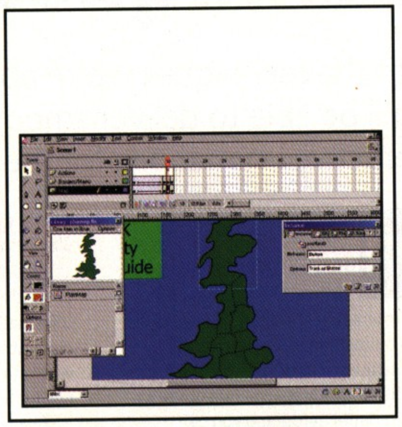
6 Now select the scotlandb button. In the ActionScript editor, add an On Mouse Event action and choose Press. Next add a Go To action. Enter 11 as the frame, and untick 'Go to and Play'.


Object Actions
Movie Explorer
Object Actions
Basic Actions
Go To
Play
Stop
Toggle High Quality
Stop All Sounds
Get URL
FSCommand
No action selected.
No Parameters

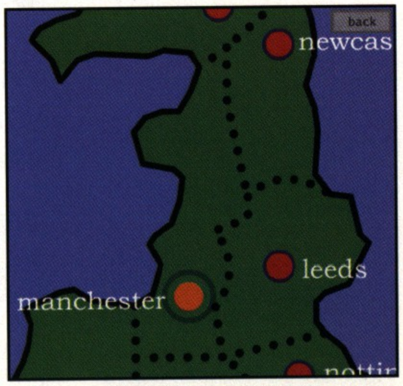
```
on (press) {
 gotoAndStop (11);
 setProperty ("zoomer", _x, "275");
 setProperty ("zoomer", _y, "450");
 setProperty ("zoomer", _xscale, "250");
 setProperty ("zoomer", _yscale, "250");
}
```

7 Now add a series of 'setProperty' actions that target the movie clip instance zoomer, and zoom in on selected regions. To the scotlandb button, use the Object Actions menu to add this script:

```
setProperty ("zoomer", _x, "275");
setProperty ("zoomer", _y, "450");
setProperty ("zoomer", _xscale, "250");
setProperty ("zoomer", _yscale, "250");
```



8 This script firstly sets a co-ordinate registration point in the centre of the region, then zooms in on that region by a factor of 300 per cent. *Flash* automatically closes the brackets at the end.


back
newcas
leeds
manchester
nottir

9 The remaining buttons work in the same way. Refer to the finished file ukmap.fla to get the co-ordinates for each zoom region. The complete file also includes a button that resets the application back to frame 10, so that users can select a new region to zoom in on. ca

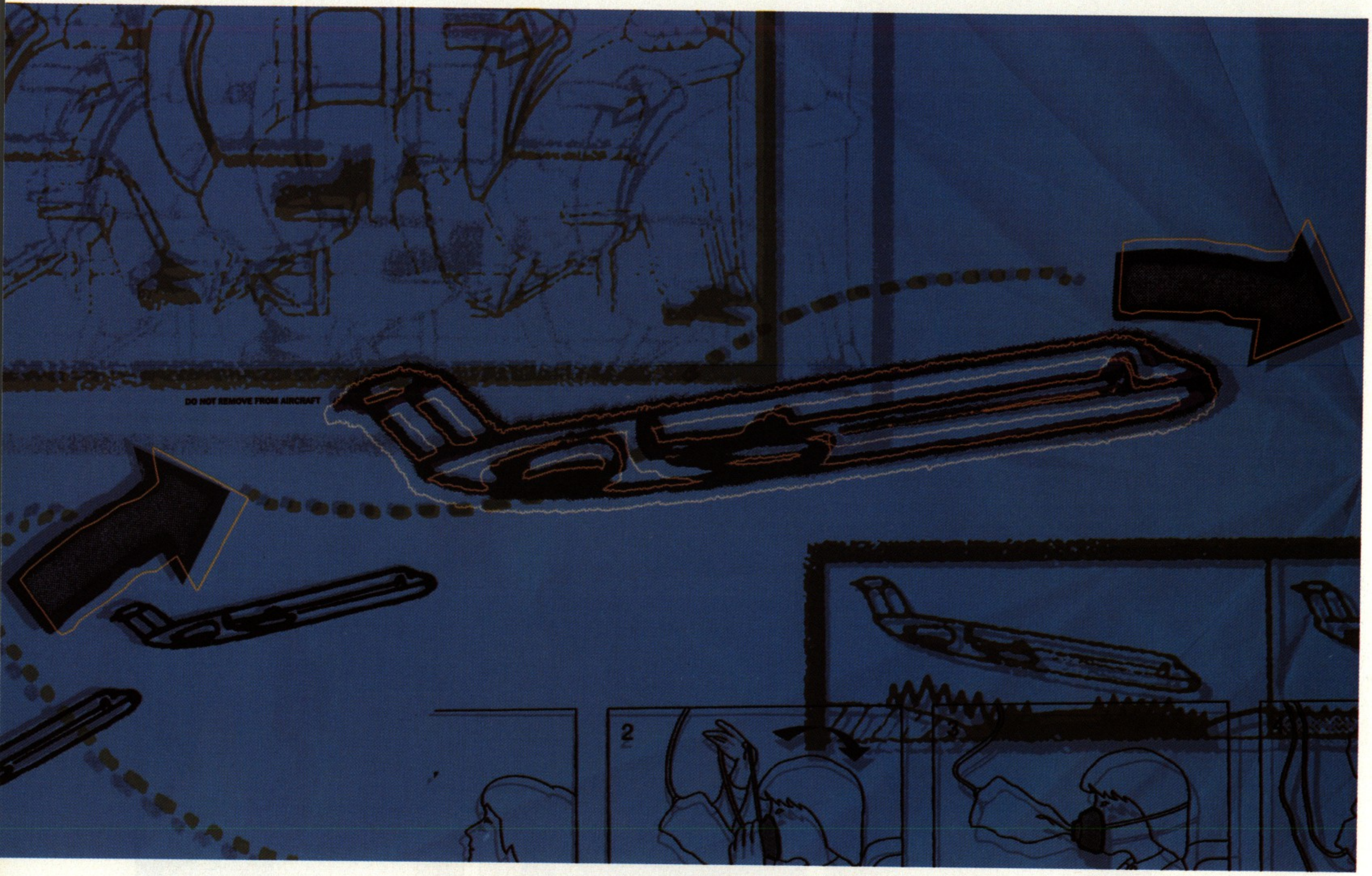

DO NOT REMOVE FROM AIRCRAFT
2

Illustration: Esther Lamb **[e]** esther.lamb@futurenet.co.uk

Interactive Flash techniques

With the techniques we're about to show you, you'll be able to deliver smooth, lightweight, interactive animations for the Web in no time

Expertise provided by Paul Cummings.
[w] www.az2.co.uk/paul
[e] paul@azartmedia. com
[t] 07950 362936

Files on disc

The tutorial file is on the coverdisc in the Tutorials\Web skills\Interactive techniques folder. Use this example in conjunction with the tutorial to get an idea of what you can do with your own projects.

Interactivity is created through the relationship of movies, code and button events. Using the example of this interactive module, you can learn how to build compelling interactive presentations or informative manuals. With this simple step-by-step guide to folding a paper aeroplane you can interact either by playing the animation all the way through, in stages, or jumping to a specific loop. This kind of interactivity is ideal for highlighting key stages in any animation.

When it comes to instructional animations, they should be simple, informative and deliver information in digestible stages. Users need to know where to start, the method and stages of production and how to see the result.

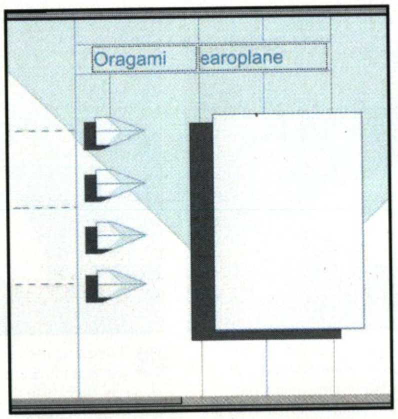
This tutorial shows you how to control two movies using buttons linked by simple ActionScript, along with various fade, morph and loop techniques.

Part 1: Preparing the stage for your animation

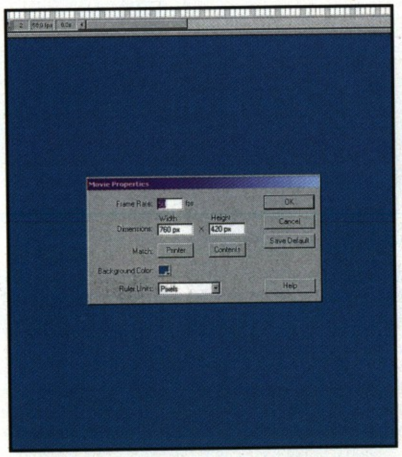
Combine techniques to create complex animation sequences, using shape hints and skewing objects on motion tweens

Recycling is memory friendly

Take advantage of re-using graphic symbols in other parts of the movie. In this case, we have mirrored some symbols using the Modify Transform option to flip and rotate objects. Recycling symbols saves on vital memory.



1 This interface comprises two movies, four buttons, two dynamic text fields and a graphic background. The first movie is an aeroplane animation and the second is a template animation showing the folds – both have a drop shadow that also animates.


Movie Properties

Frame Rate: fps

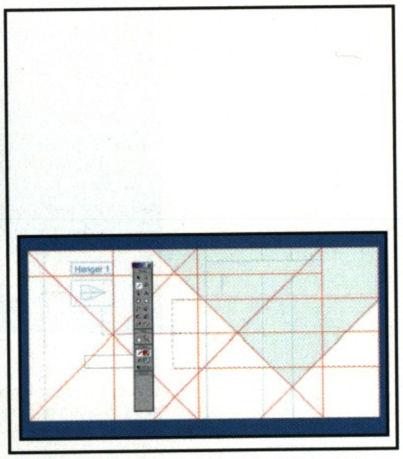
Dimensions: Width 760 px × Height 420 px

Match: Printer Contents

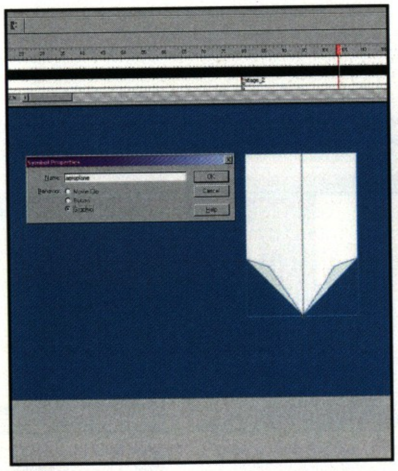
Background Color:

Ruler Units: Pixels

2 Create a new movie running at 50fps. On the main timeline allow two keyframes for your buttons and movies, with stop ( ) commands in each of the frames.



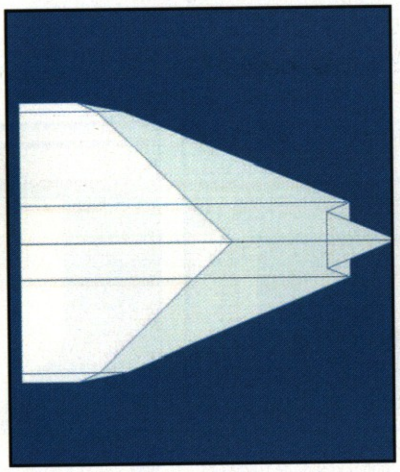
3 Draw a background graphic on the lowest layer running through both keyframes. It's useful to have a guide layer to align all your objects. Select Snap to Guides in the View menu bar.


Symbol Properties

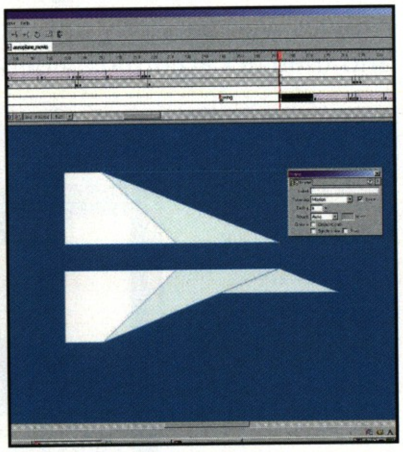
Name: aeroplane

Behavior: ○ Movie Clip ○ Button ● Graphic

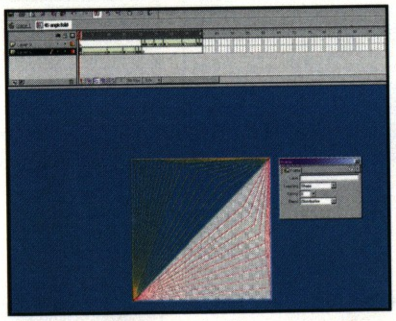
4 For the aeroplane movie you need to make a graphic symbol that is placed into a movie clip symbol, which enables it to be controlled by the buttons. Press F8 and select Graphic Radio button.



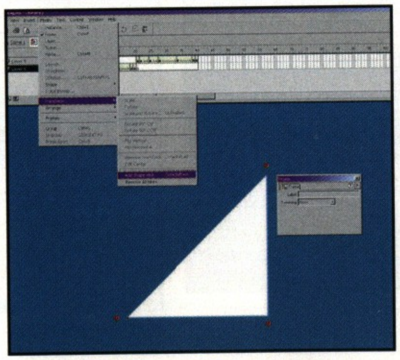
5 Now you're inside the graphic symbol, let your creativity flow. Remember to place crucial stages in your animation which give the viewer opportunities to view the details.



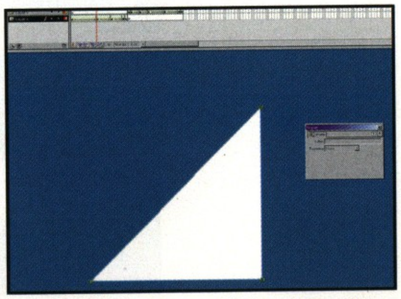
6 The example animation here is a compound of lots of little animations that have been synchronised using the timeline. By combining shape tweens, motion tweens and static images, a complex animation can be built.



7 Following the example of the aeroplane, the most basic components are triangles that have been shape-tweened. You can use shape hints to morph shapes. Note, you can only use shape hints on shape tweens and not motion tweens.

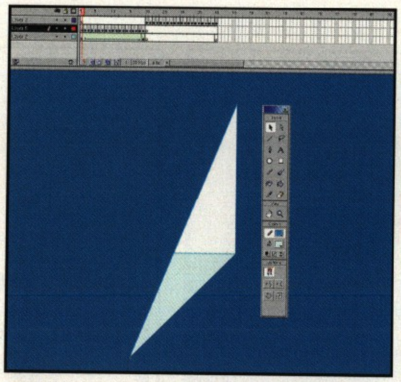


8 To control shape tweens, press Ctrl-Shift-H to add shape hints. When adding shape hints, place them around the shape in a clockwise direction.

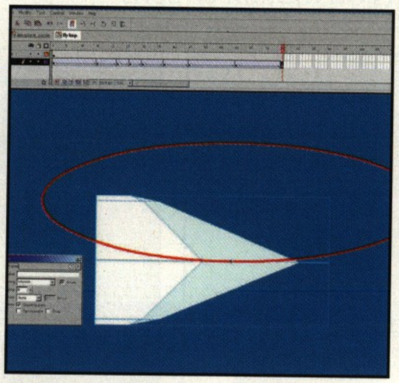


9 The shape hints in your initial keyframe will appear red; re-position your shape hints making sure they snap to your shape – they will turn yellow. In the last keyframe, if any shape hints are red they too need to be snapped to your shape, at which point they will turn green for go.

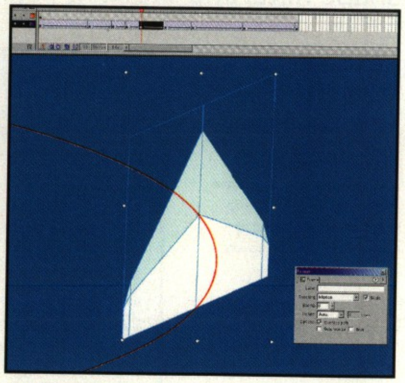
Part 1: Preparing the stage for your animation continued...



10 If the angle of your shape is too acute, that is, less than 15 degrees at any given point in your shape, the shape hints may not work. If so, you may need to resort to more traditional methods, drawing them by hand, frame-by-frame.



11 Creating perfect loops such as the 'fly me section'. The animation is created using a motion guide. On the last keyframe, place the object a little behind its intended destination so that it adds smoothness to the animation loop.



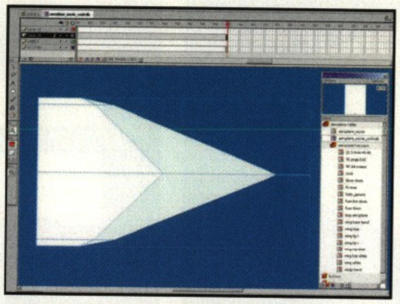
12 Tweening techniques using skew on a motion guide adds dramatic perspective. To create a skew by hand, use the Rotation tool on the toolbar and drag the side anchor points onto the highlighted object.

Part 2: Adding ActionScript to the movie

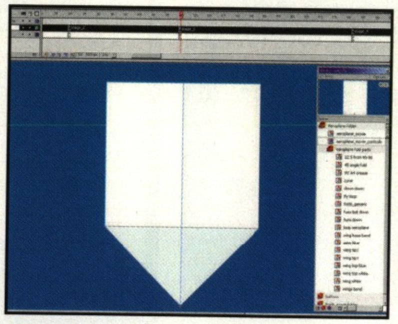
Movies wait patiently until you send instructions to them, and then act accordingly depending on the command

Communicating with movies

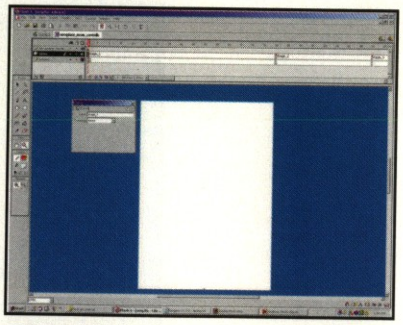
ActionScript can communicate with Movie clip symbols, but not Graphic symbols. That's why you need to create Movie clip containers. By giving a Movie clip an instance name you can communicate with it.



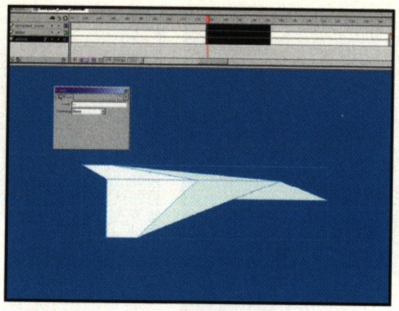
1 Place the aeroplane graphic animation into a new Movie clip symbol – this acts like a container for your animation. Extend the frames to the exact length of the embedded graphic animation. When you scrub through the timeline, the animation should only play once.



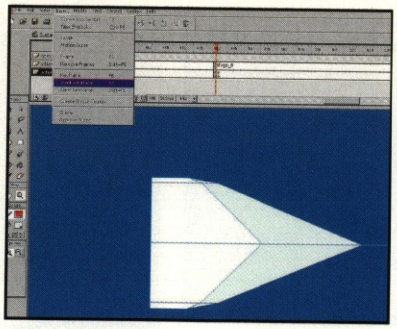
2 Insert two extra layers, naming one 'actions' and the other 'labels'. In the actions layer insert the stop () command into the first frame of this clip. This ensures the movie is static unless, of course, you tell it to play.



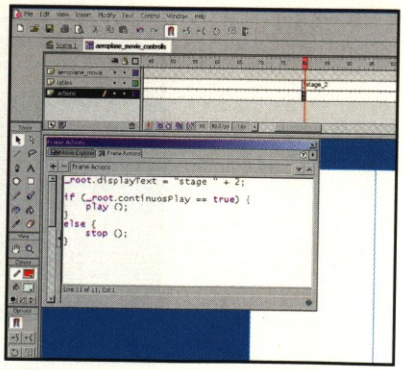
3 Select the first frame in the labels layer and add a label by using your Frame Options panel. Enter 'stage_1' into the label text box. When you click on the main stage, a little red flag appears on the timeline with your label name written next to it.



4 You can target any particular stage in your animation by its labels, starting or stopping an animation from the position of the label. This is more flexible than using frame numbers, because you can shorten or lengthen your animation without having to keep changing your script.

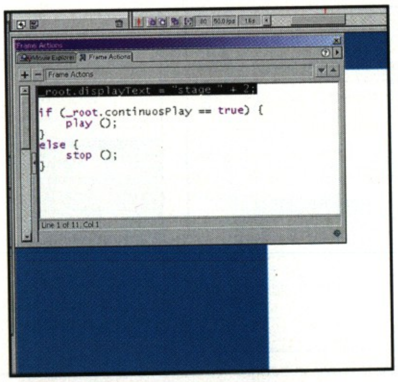


5 Insert blank keyframes (using the F7 shortcut) along the timeline at crucial stages in your animation. In each of these empty keyframes, add labels in succession. In this example it is 'stage_1' through to 'stage_8'.



```
_root.displayText = "stage " + 2;
if (_root.continuosPlay == true) {
    play ();
}
else {
    stop ();
}
```

6 In the actions layer, insert a new keyframe at the same position below the 'stage_2' label. Using your Frame Actions panel enter this code.

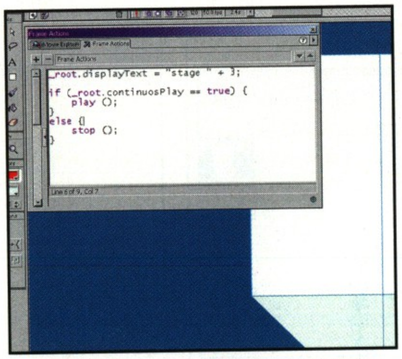


```
_root.displayText = "stage " + 2;

if (_root.continuosPlay == true) {
     play ();
}
else {
     stop ();
}
```

Line 1 of 11, Col 1

7 The first line of this code will pass text information up to the main stage. The rest of the code waits for a user to press a button, signalling the animation to play all the way through or to stop at the nearest important stage.

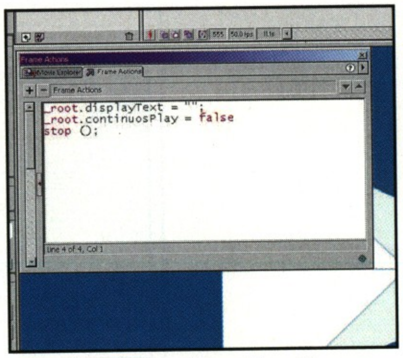


```
_root.displayText = "stage " + 3;

if (_root.continuosPlay == true) {
     play ();
}
else {
     stop ();
}
```

Line 6 of 9, Col 7

8 Insert the same code in every other keyframe that has labels and amend the first line of code, increasing the number according to the label, that is, in the frame position 'stage_3' the first line of code should be:
_root.displayText = "stage " + 3



```
_root.displayText = "";
_root.continuosPlay = false
stop ();
```

Line 4 of 4, Col 1

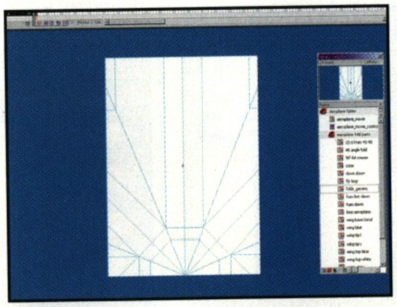
9 In the keyframe at 'Stage_8' insert the same code as above, but delete the first line. Write this code into the next keyframe:
_root.displayText = "watch me go"
In the last frame of the animation, enter the code illustrated above.

Part 3: Transition fades

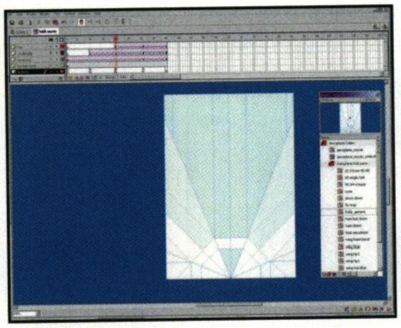
For smooth transitions between graphics, fade multiple layers in and out using tweened alpha transparency

Easy on the alpha

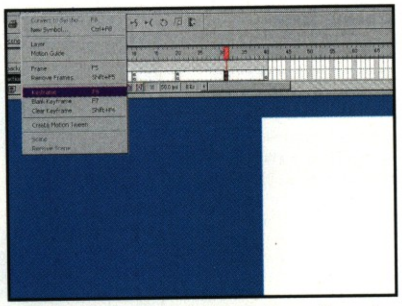
Alpha transitions are very processor intensive, so be sparing when applying it to your animation. Avoid using this transition on large graphics, because it has a tendency to flicker.



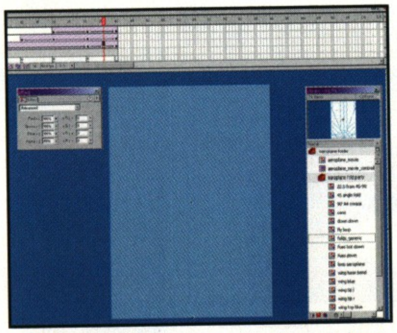
1 You need to make a second movie that illustrates what the paper aeroplane would look like if it was completely unfolded. This shows the top and underside side folds. You're going to create smooth transitions using a fade in and out effect between the graphics.



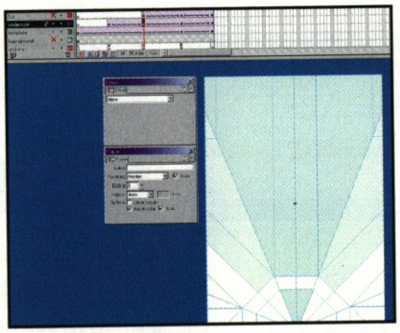
2 Make four graphics symbols that occupy different layers. Name the bottom layer 'actions' and continue up with the next layers, naming them 'background', 'template', 'underside' and 'top'. The animation should be 40 frames long.



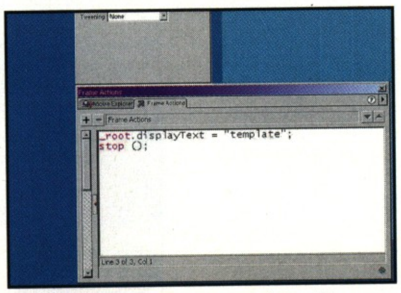
3 The background graphic should span through the entire animation. Place the template graphic in the template layer. Add a motion tween by selecting the Frame panel and highlight motion tween from the dropdown menu. Press F6 to add keyframes at frames 30 and 40.



4 Select the first keyframe of the Template layer. Using the Effect panel, highlight Alpha from the dropdown menu and then set the slider to 0. Repeat this process on the last keyframe. For a quick preview, press Return.



5 Place the other graphics according to the labels created earlier. Set the underside graphic alpha to 0 at keyframe 10, then fade in at frame 20 and fade out at frame 30. Do the same for the top graphic, starting at 20, fading in at 30 and out at 40.



Tweening: None

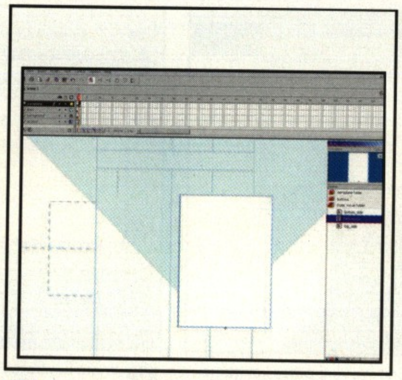
```
_root.displayText = "template";
stop ();
```

Line 3 of 3, Col 1

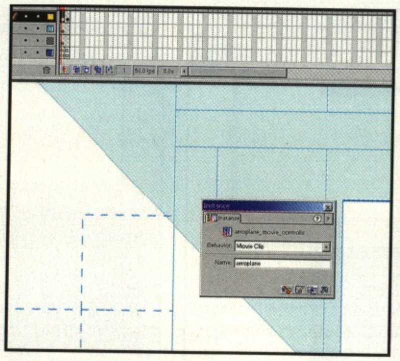
6 Using the Frame Actions panel, insert the following code into frame1:
root.displayText = " ";
and write in this code for the following frames:
frame 10: _root.displayText = "template"; stop ();
frame 20: _root.displayText = "underside";stop ();
frame 30: _root.displayText = "top side";stop ();

Part 4: Naming instances and dropping shadows

Animated drop-shadows can enhance the depth and space of flat vector graphics

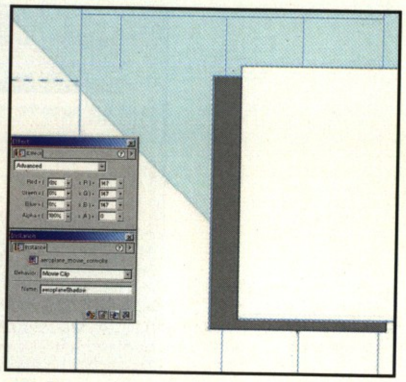


1 Create a new layer on the main timeline and place your aeroplane movie in the first keyframe. On the second keyframe, create a blank keyframe by pressing F7 and drop your folds movie on to the stage.



Behavior: Movie Clip
Name: aeroplane

2 Highlight the aeroplane movie in frame 1. Using the Instance panel, give the aeroplane movie an instance 'name' by entering 'aeroplane'. Give the folds movie in frame 2 an instance name of 'folds'. By giving movies instance names you can communicate with them.



Behavior: Movie Clip
Name: aeroplaneShadow

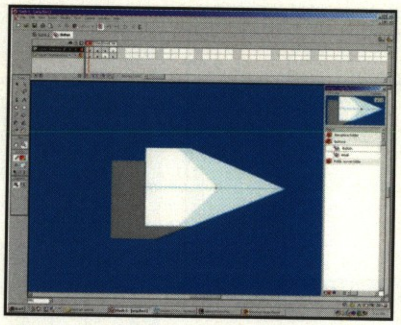
3 For a cool drop-shadow effect, make a duplicate of the aeroplane movie clip giving it an instance name 'aeroplaneShadow'. Change its colour and place it underneath the 'aeroplane' instance; do the same for the fold movie.

Part 5: Adding scripts to buttons

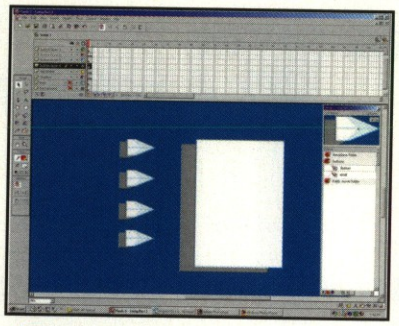
True or false statements in buttons help to decide the behaviour of your movie

Coding faster

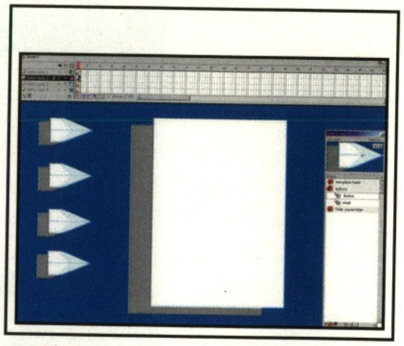
Make writing code quicker by copying and pasting similar code. Use Ctrl+T to check the syntax for any errors. Coding in Expert mode uses substantially less code and its syntax gets to the point more directly.



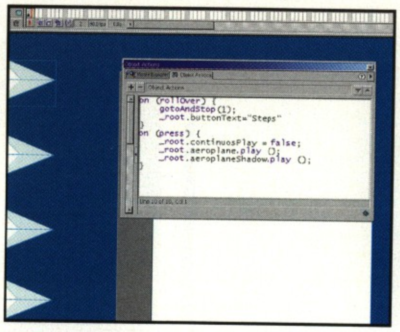
1 You are going to write five different scripts that control your movie in different ways. The buttons send data to the movie made in Part 2. Using true and false statements and labels, you can define the behaviour of your movie.



2 To create a button, press F8 and select the Button option. Make rollovers subtle but clear. Drag this button on to the first frame of the main stage and duplicate until you have four buttons on separate layers.

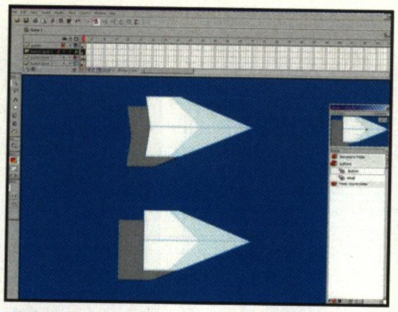


3 The buttons in layers 1, 3 and 4 span two keyframes. The button in layer 2 occupies two separate keyframes. This is because it will contain two different actions on each keyframe.

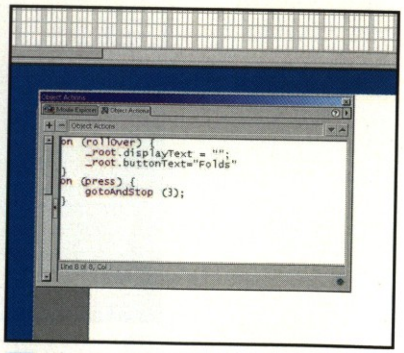


```
on (rollOver) {
     gotoAndStop (1);
     _root.buttonText="Steps"
}
on (press) {
     _root.continuosPlay = false;
     _root.aeroplane.play ();
     _root.aeroplaneShadow.play ();
}
```

4 Select the button in the first layer and open the Object Actions panel and enter this code. The script below plays the movie in stages. The aeroplane movie evaluates whether _root.continuosPlay = false; in this case it will stop.

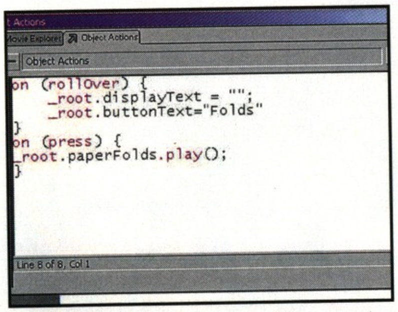


5 True or False! You want to tell your aeroplane movie whether it needs to play continuously or stop at stages. This is achieved by stating _root.continuosPlay = true. The movie created in Part 2 checks to see what state _root.continuosPlay is in. False stops the movie.



```
on (rollOver) {
     _root.displayText = "";
     _root.buttonText="Folds"
}
on (press) {
     gotoAndStop (3);
}
```

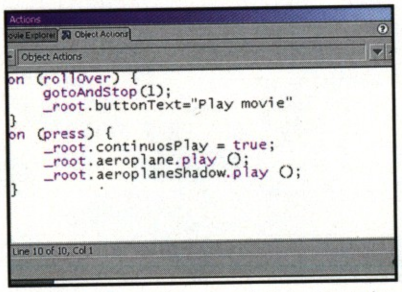
6 Select the button in the second layer, first keyframe, and enter this code. The script makes the play-head go to the next keyframe where the 'folds' movie plays.



```
on (rollOver) {
    _root.displayText = "";
    _root.buttonText="Folds"
}
on (press) {
_root.paperFolds.play();
}
```

Line 8 of 8, Col 1

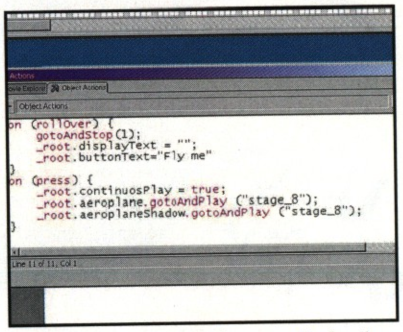
7 Select the button in the second layer, second keyframe, and enter this code. This controls the 'folds' movie. The 'folds' movie contains stop actions, so the user has to keep pressing the button for the next stage.



```
on (rollOver) {
    gotoAndStop(1);
    _root.buttonText="Play movie"
}
on (press) {
    _root.continuosPlay = true;
    _root.aeroplane.play ();
    _root.aeroplaneShadow.play ();
}
```

Line 10 of 10, Col 1

8 Place this code (see screenshot above) into the button on the third layer; this makes the aeroplane movie play through without stopping until the end of the animation. The aeroplane movie evaluates whether _root.continuosPlay = True; in this case it plays.



```
on (rollOver) {
    gotoAndStop(1);
    _root.displayText = "";
    _root.buttonText="Fly me"
}
on (press) {
    _root.continuosPlay = true;
    _root.aeroplane.gotoAndPlay ("stage_8");
    _root.aeroplaneShadow.gotoAndPlay ("stage_8");
}
```

Line 11 of 11, Col 1

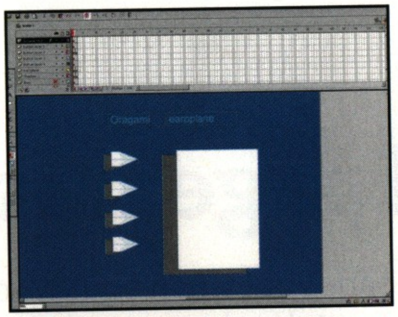
9 Place this code into the button on the fourth layer. The script commands the play-head in the aeroplane movie to jump to and play from the position of label 'stage_8' – 'Fly me' animation part.

Part 6: Displaying text

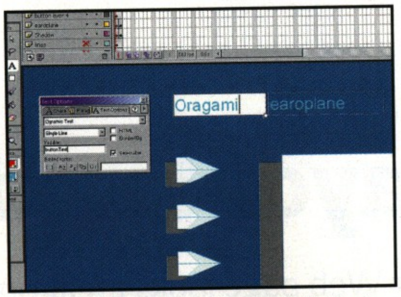
Guide the user with written explanations by displaying continuously changing text

Exporting fonts

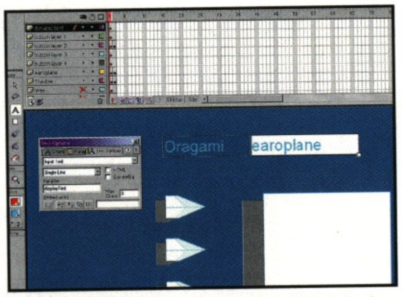
When creating dynamic text fields, it's important to consider the font you are using: if a user's computer doesn't support a particular font, the text will not display. If you're uncertain, select the Embedded Fonts button from the Text Options panel to export your chosen font outline.



1 Dynamic text fields are text boxes that can display continuously changing information. A dynamic text field is always associated to a variable. The text field prints the contents of a variable.



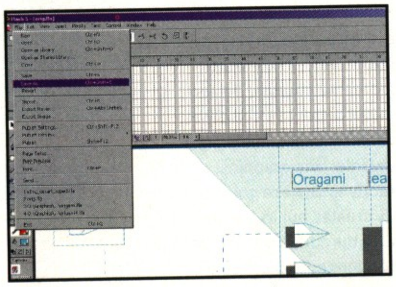
2 Create a text field by selecting the Text tool, then click on the stage. Using the Text Options panel, highlight Dynamic Text in the top dropdown menu. Enter 'buttonText' into the variable box, so this variable is displayed on screen.



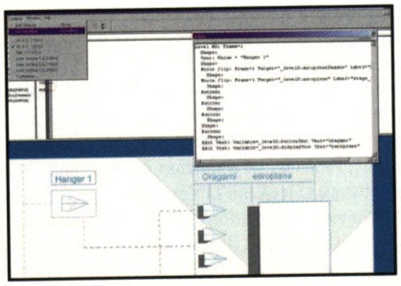
3 You need to create another text field to display the variable 'displayText'. When the variable, _root.displayText in your aeroplane movie changes, so does the text field on your main stage. Text fields make invisible variables visible and tangible.

Part 7: Exporting your movie

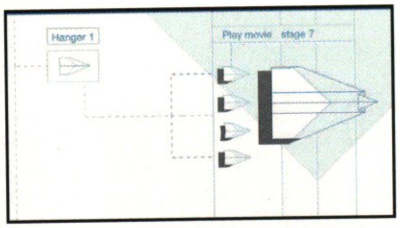
Exporting a movie is a crucial stage for debugging and user testing



1 When creating any project, make sure you export your movie as often as possible to see whether your movie is behaving the way you want. Remember though, you will overwrite the existing swf. A handy tip is to Save As at every stage so you can refer back to your previous stage.



2 Identifying a bug is usually harder than correcting it. Start with your buttons working down into your movie so you can identify the problem. Even experts have to build projects by trial and error, continually testing and debugging. This is as important as any other stage in a project.



3 Once you're satisfied with your project, get someone else to test it. Watch how users navigate your interface noting improvements or adding more clarity. Keep in mind when building interactive instructional animation that simplicity and usability is the key. This tutorial has covered a large range of topics from animation through to programming, which will certainly equip you for most interactive projects. ca

Layout and page design

Your Web page looks great on paper, but when you try to recreate it in *Dreamweaver*, the HTML just won't do what you want it to. Sound familiar? Then join our whistle-stop tour of wraps, cuts, boxes, bleeds and other common design niggles…

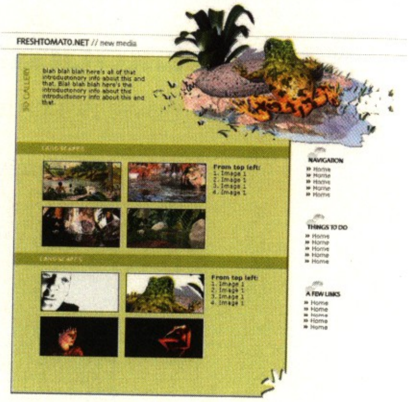
Traditional design relies heavily on features like precise positioning, grids, lines, boxouts, bleeds, wraparounds, cut-outs, cut-throughs, dropcaps and more, to make it attractive and interesting.

Yet not one of these is directly supported in HTML, and you won't find buttons for them in *Dreamweaver*. Moreover, every Web designer knows that even when you do find a solution, it's a hassle getting it to look the same on all the major browsers and platforms: *IE 4* and *5*, and *Netscape 4* and *6*, each on PC and Mac; and now TV and games consoles to boot.

The worrying upshot of this is that many designers decide to forget the fancy layout, and focus on the *Flash* and graphics, with the result that a great many Web pages are less stunning than they could be. You can see it across the Web, from massive media portals to small company brochure sites.

However, it is possible to achieve all of these in HTML, providing you know how. Usually Web designers start by designing their page in *Photoshop*, *Fireworks* or another intuitive design app, and then recreate it as closely as possible in *Dreamweaver*, cutting out and importing interface graphics.

This is exactly what we're going to do: we've already created our ideal design in *Fireworks* (with the added advantage that everything remains editable) using traditional features that are harder to do in HTML. We'll show you how to recreate this design in HTML, plus all the key layout techniques needed to create Web pages that match your visualised design.



FRESHTOMATO.NET // new media

3D GALLERY

blah blah blah here's all of that introductonory info about this and that. Blah blah blah here's the introductonory info about this introductonory info about this and that.

From top left:
1. Image 1
2. Image 1
3. Image 1
4. Image 1

From top left:
1. Image 1
2. Image 1
3. Image 1
4. Image 1

NAVIGATION
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A FEW LINKS
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» Home

Expertise provided by Nick Nettleton [e] nick@nicknettleton.co.uk. The illustration and images used in our interface were rendered in *Vue d'Esprit 3.1*, a 3D landscape program. The frog and other models all come with the package, which costs £136. For more info, go to [w] www.e-onsoftware.com If you haven't got Dreamweaver, you can download a 30-day demo from [w] www.macromedia.com

Files on disc

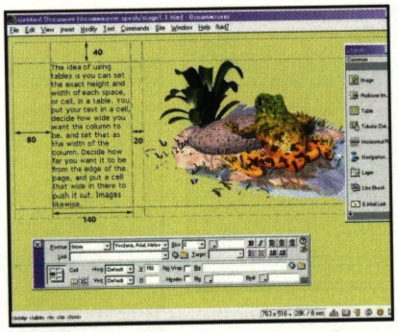
The files for this tutorial are on the CD in the Tutorials\Web skills\Layout and page design folder.

Part 1: Positioning, boxouts and type

We'll kick off with the basics of laying out pages in *Dreamweaver*. Skip ahead if you already know this…

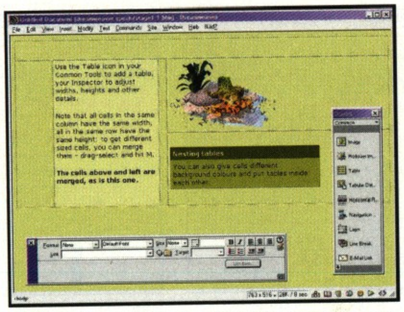
CD files

Before we start, you need to get the files off your CD. Set the folder up as a new site in *Dreamweaver* – check the documentation if you don't know how to do this – and create a new document. The first file is called interface.png, or you can use the TIF version with *Photoshop* or another app.



The idea of using tables is you can set the exact height and width of each space, or cell, in a table. You put your text in a cell, decide how wide you want the column to be, and set that as the width of the column. Decide how far you want it to be from the edge of the page, and put a cell that wide in there to push it out. Images likewise.

1 The idea of using tables is you can set the exact height and width of each space, or cell, in a table. You put your text in a cell, decide how wide you want the column to be, and set that as the width of the cell. Decide how far you want it to be from the edge of the page, and put a cell in there with that width to push it out. Images likewise.



Use the Table icon in your Common Tools to add a table, your Inspector to adjust widths, heights and other details.

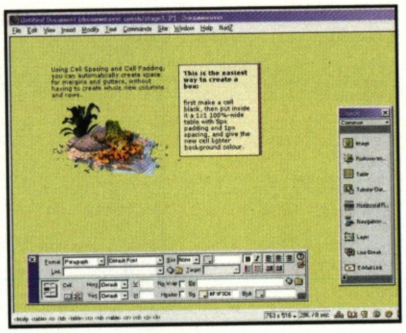
Note that all cells in the same column have the same width, all in the same row have the same height: to get different sized cells, you can merge them – drag-select and hit M.

The cells above and left are merged, as is this one.

Nesting tables

You can also give cells different background colours and put tables inside each other.

2 Use Insert>Table to add a table, then use your Inspector to adjust widths, heights and so on. All cells in the same column have the same width, and all in the cells in the same row have the same height. To get different sized cells, you can merge them – drag-select and hit M. You can also give them different background colours, and put tables inside each other.

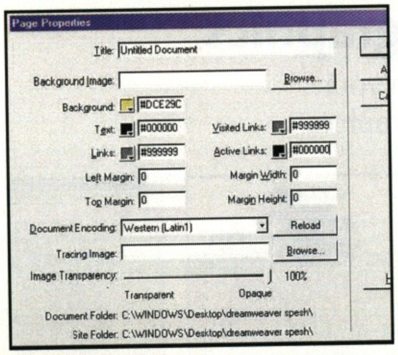


Using Cell Spacing and Cell Padding, you can automatically create space for margins and gutters, without having to create whole new columns and rows.

This is the easiest way to create a box:

first make a cell black, then put inside it a 1x1 100%-wide table with 5px padding and 1px spacing, and give the new cell lighter background colour.

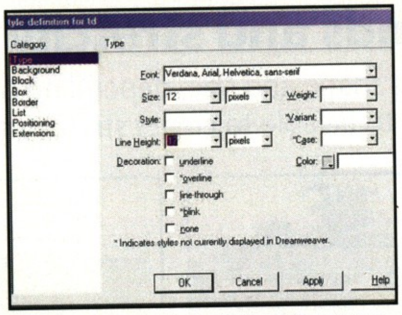
3 Using Cell Spacing and Cell Padding, you can automatically create space for margins and gutters without having to create new columns and rows. This is the easiest way to create a box: first make a cell black, then put a 1x1 100 per cent-wide table with 5px padding and 1px spacing inside it and give the new cell a lighter background colour.



Page Properties

Title: Untitled Document
Background Image:
Background: #DCE29C
Text: #000000
Visited Links: #999999
Links: #999999
Active Links: #000000
Left Margin: 0
Margin Width: 0
Top Margin: 0
Margin Height: 0
Document Encoding: Western (Latin1)
Tracing Image:
Image Transparency: 100%
Document Folder: C:\WINDOWS\Desktop\dreamweaver spesh\
Site Folder: C:\WINDOWS\Desktop\dreamweaver spesh\

4 Click Modify>Page Properties to set basic features like the background colour, main text and link colours and page margins. We're using #DCE29C for the background, and 0 for all four margin settings to make calculations easier later.



tyle definition for td

Category: Type

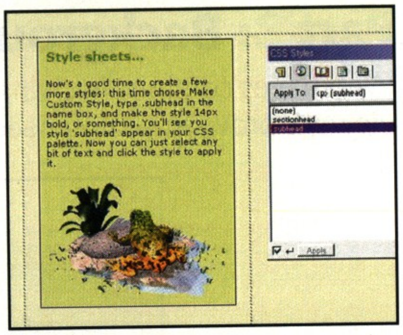
- Type
- Background
- Block
- Box
- Border
- List
- Positioning
- Extensions

Type

Font: Verdana, Arial, Helvetica, sans-serif
Size: 12 pixels
Weight:
Style:
Variant:
Line Height: 17 pixels
Case:
Decoration: ☐ underline ☐ *overline ☐ line through ☐ *blink ☐ none
Color:

* Indicates styles not currently displayed in Dreamweaver.

5 You can control text using the settings in your Inspector, but the CSS (or Style Sheets) palette offers much better control. Click the New icon, choose Redefine HTML Tag, set the dropdown to 'td' (which means a table cell), and set a font, size, colour and so on. We've used 12 pixel Verdana Arial Helvetica, black with a 17 pixel line height.



Style sheets…

Now's a good time to create a few more styles: this time choose Make Custom Style, type .subhead in the name box, and make the style 14px bold, or something. You'll see you style 'subhead' appear in your CSS palette. Now you can just select any bit of text and click the style to apply it.

CSS Styles

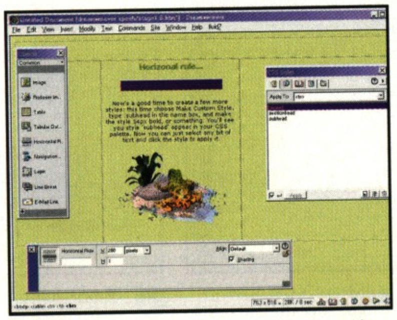
Apply To: <p> (subhead)

(none)
sectionhead
subhead

6 Now's a good time to create a few more styles. This time choose Make Custom Style, type .subhead in the name box, and make the style 14px bold, or something. You'll see your style 'subhead' appear in the CSS palette. Now you can just select any bit of text and click the style to apply it.

Part 2: Lines and edges

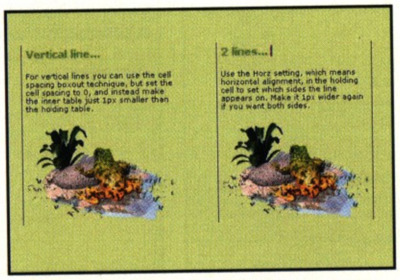
Line and space is a key counterpoint in traditional design, but in the absence of a Line tool, you'll need to know the techniques available…



Horizonal rule…

Now's a good time to create a few more styles: this time choose Make Custom Style, type .subhead in the name box, and make the style 14px bold, or something. You'll see you style 'subhead' appear in your CSS palette. Now you can just select any bit of text and click the style to apply it.

1 Often in layout design you want just a single line, rather than a box. You can use the HTML horizontal rule (in your Common Tools box), but this doesn't offer much in the way of control over appearance, and it has no vertical counterpart.



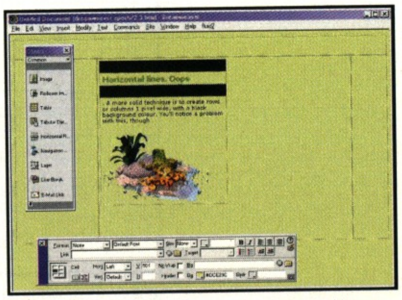
Vertical line…

For vertical lines you can use the cell spacing boxout technique, but set the cell spacing to 0, and instead make the inner table just 1px smaller than the holding table.

2 lines…

Use the Horz setting, which means horizontal alignment, in the holding cell to set which sides the line appears on. Make it 1px wider again if you want both sides.

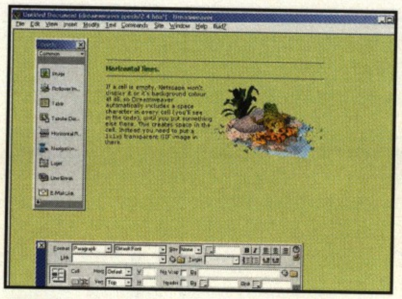
2 For vertical lines, you can use the cell spacing boxout technique, but set the Cell Spacing to 0, and instead make the inner table just 1px thinner than the holding table. Use the Horz setting, which means horizontal alignment, in the holding cell to set which side the line appears on. Make it 1px wider again if you want both sides.



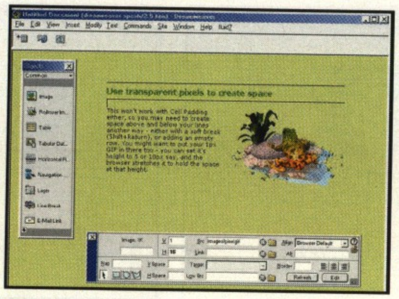
Horizontal lines. Oops

… A more solid technique is to create rows or columns 1 pixel wide, with a black background colour. You'll notice a problem with this, though

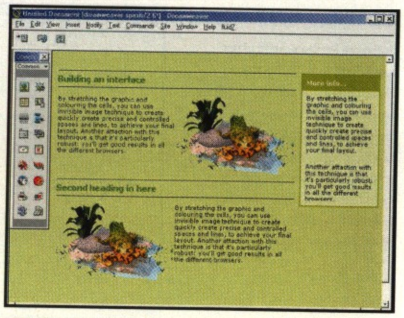
3 This won't work so well with horizontal lines, because you can't exactly control the flow of text and therefore the heights of cells, on different systems. A more solid technique is to create rows or columns 1 pixel wide, with a black background colour. You'll notice a problem with this, though…



4 If a cell is empty, Netscape won't display it or its background colour at all, so *Dreamweaver* automatically includes a space character in every cell (you'll see   in the code), until you put something else there. This creates space in the cell. Instead you need to put a 1x1px transparent GIF image in there.



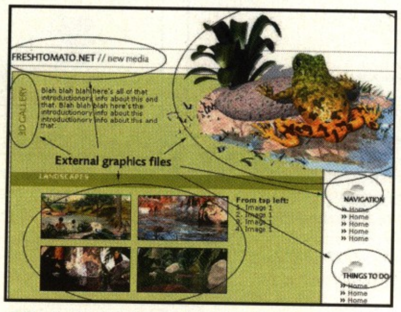
5 This won't work with Cell Padding either, so you may need to create space above and below your lines another way – either with a soft break (Shift+Return), or by adding an empty row. You might want to put your 1px GIF in there too – you can set its height to 5 or 10px say, and the browser stretches it to hold the space at that height.



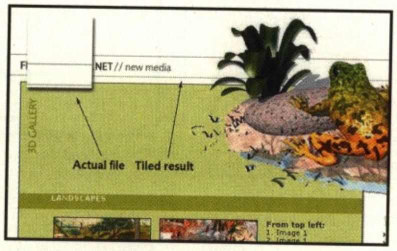
6 By stretching the graphic and colouring the cells, you can use invisible image technique to quickly create precise and controlled spaces and lines, to achieve your final layout. Another attraction with this technique is that it's robust: you'll get good results in all the different browsers.

Part 3: Backgrounds and stretchy graphics

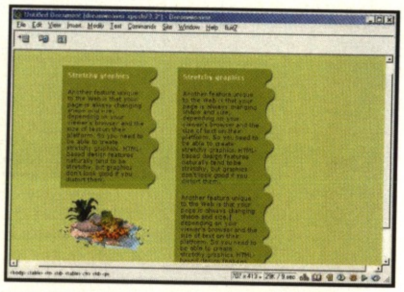
Web pages continually change shape and size, depending on your viewer's browser, so you need to be able to create stretchy graphics


FRESHTOMATO.NET // new media
External graphics files
3D GALLERY
LANDSCAPES
NAVIGATION
THINGS TO DO

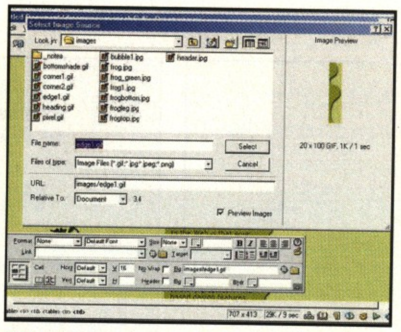
1 The idea of Web, just like print, is to sort out your grids, layout and copy within *Dreamweaver*, and then bring in images and graphical elements from *Photoshop*, *Illustrator*, *Fireworks* or similar, to add specific visual features to your design.


NET // new media
Actual file
Tiled result
3D GALLERY
LANDSCAPES

2 One clear difference, though, is that it's essential to keep file sizes as small as possible on the Web, for short download times. Image files are relatively large byte-wise, which means reusing graphics files wherever possible. Your viewer only has to download a file once, even if it's in your design 100 times over. Here, the lines in the background are created by a single, small file repeated crossways many times over.



3 Another feature unique to the Web is that your page is always changing shape and size, depending on your viewer's browser and the size of text on their platform. So you need to be able to create stretchy graphics. HTML-based design features naturally tend to be stretchy, but graphics don't look good if you distort them.



Look in: images

File name: edge1.gif

Files of type: Image Files (*.gif;*.jpg;*.jpeg;*.png)

URL: images/edge1.gif

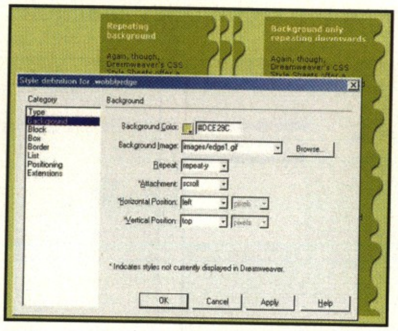
Relative To: Document

20 x 100 GIF, 1K / 1 sec

☑ Preview Images

Select Image Source
_notes
bottomshade.gif
corner1.gif
corner2.gif
edge1.gif
heading.gif
pixel.gif
bubble1.jpg
frog.jpg
frog_green.jpg
frog1.jpg
frogbottom.jpg
frogleg.jpg
frogtop.jpg
header.jpg
Image Preview
Select
Cancel

4 Instead, you can create seamless tile graphics, and use HTML's background setting, which repeats an image as many times over as it takes to fill the space. You can set a background image for your whole page in the Modify>Page Properties dialog, or you can set it just for a table cell using the bg slot in your Inspector.



Style definition for .wobblyedge

Background Color: #DCE29C

Background Image: images/edge1.gif

Repeat: repeat-y

*Attachment: scroll

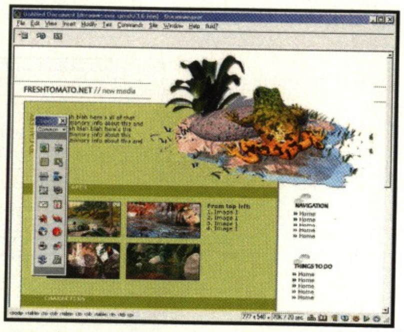
*Horizontal Position: left

*Vertical Position: top

* Indicates styles not currently displayed in Dreamweaver.

Repeating background
Background only repeating downwards
Category
Type
Background
Block
Box
Border
List
Positioning
Extensions
Browse...
OK
Cancel
Apply
Help

5 Again, though, *Dreamweaver's* CSS Style Sheets offer a much more powerful and trusty solution. Create a new style called .wobblyedge, and click the Backgrounds tab in the Style editor. Here you can set whether the tile repeats or not, and choose whether it goes in just one direction, scrolls with the page, or has an offset.


FRESHTOMATO.NET // new media
NAVIGATION
THINGS TO DO

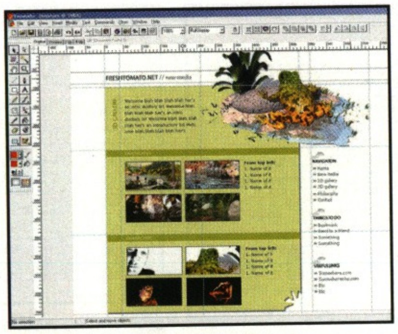
6 Tiling isn't the only reason we're using a graphic for the heading lines of our interface: HTML backgrounds also offer the most reliable and effective way to flow one interface element over another, or superimpose graphics. If we'd used lines created from cells, we'd only be able to run them up to the edge of the rectangular frog image file.

Part 4: Creating a grid

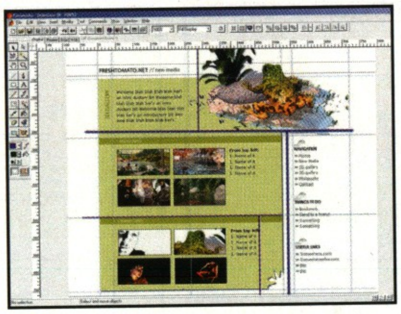
Let's get going on the actual design: first we need to create the main grid and template

Tables

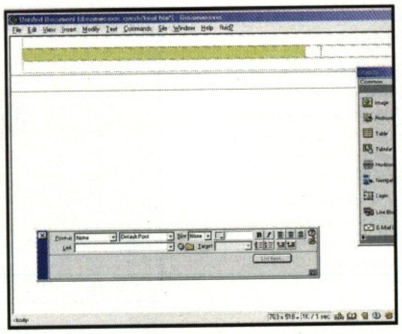
We're going to use tables as our main tool for positioning – like text and picture boxes in *QuarkXPress*. You might be tempted to use layers, but tables are a better bet. Unless you know a great deal about the different browsers and layer technology, layers are likely to give you a nasty shock when you come to preview your layout on someone else's computer.



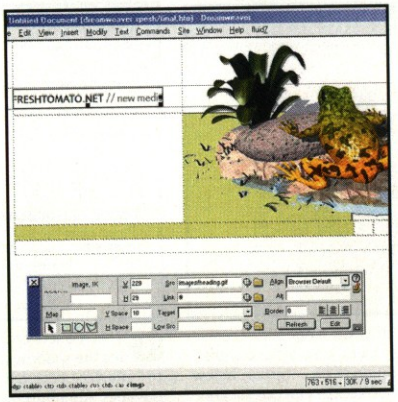
1 This is the difficult bit. You'll need *Dreamweaver*, your graphics app with your interface design, and your browser open all at the same time. Open a fresh document in *DW*, set up your basics, then take a look at the interface design and work out what the main table areas will be.



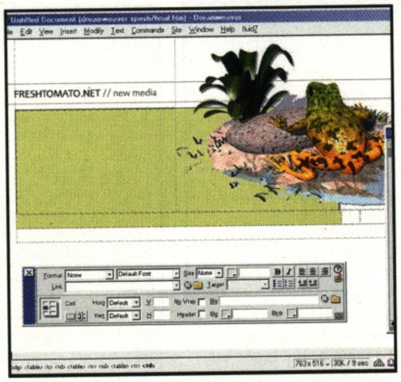
2 Here you can see how we're going to divide things up: one big cell to hold the top area, using tested tables, and then one for the main content and update area, and one for the navigation. The paler lines show how we'll break up nested tables. All the HTML should come to no more than 10K.



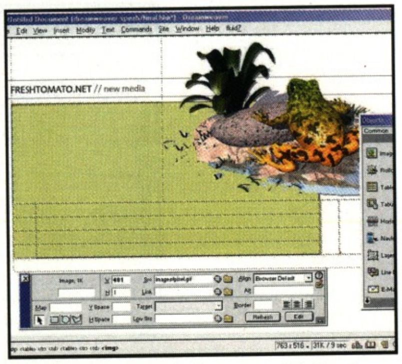
3 Set the background image in place, then create a simple 4x3 (rows x columns) table, 720px wide. This will hold our whole page. Merge the top and bottom three cells into one, then set the widths of the middle three to 525, 30 and 165 pixels respectively, and colour the left of these #DCE29C.



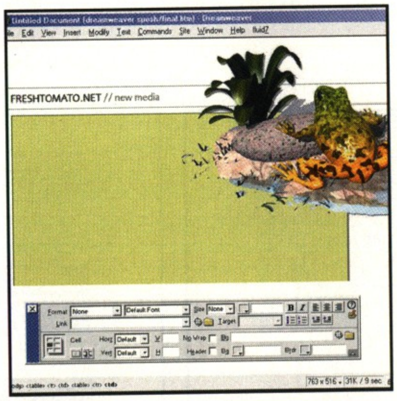
4 In the top cell, add a new 2x2 table, 720px wide, and set the columns to 260 and 460. Then merge the right-hand pair and put the frog.jpg image in here. Set the height of the top left cell to 113px, set its Vert (vertical align) to bottom, then put the heading.gif graphic in here, and set its V Space to 10, to lift it above the baseline.



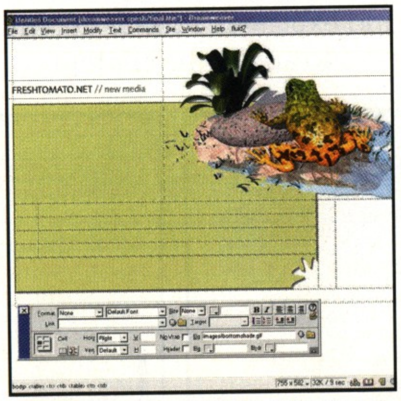
5 Set the background colour of the empty cell below this, and set its Vertical Align to Top. Then put a new 2x2, 100 per cent-wide table in here, and set its height to 169. Turn the top row of this into a 1px line, using a transparent GIF and setting the height of the image and the row to 1px, and set its colour to #5E5F4F. Create a vertical line with the left cell in the same way.



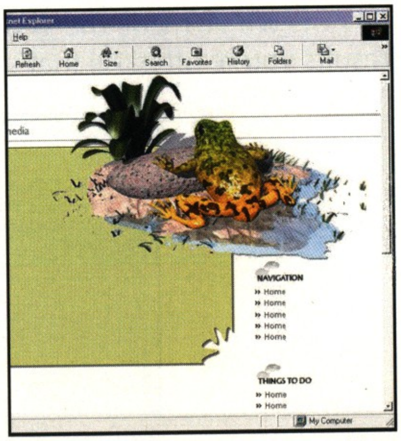
6 Place your cursor in the green cell furthest down the page: this is the main content area. Clear its background colour, set its Vertical Align to Top, and insert a 525px, 5x5 table with the previous colour as its background colour. To hold its columns exactly in place, you need to put a 1px transparent image in each cell along the bottom row, and set their widths to 1, 40, 481, 1 and 2px. Merge all the cells in the first and last two columns.



7 Use your cursor keys to move through the cells, setting the colour of the first and second last to #5E5F4F, and the last to #979692. Click View>Table Borders to hide them for a better preview, and see what you've got. It should look something like this – if not, check what you've got against our file on the CD.



8 Directly underneath this table, in the same cell, add a 1x2 table, 525 wide. Turn the first cell into a 1px outline, and add the corner1.gif image aligned right in the other cell. Finally, add the bottomshade.gif image as a background image to the second cell, using the Browse button from your Inspector or CSS Style Sheets.



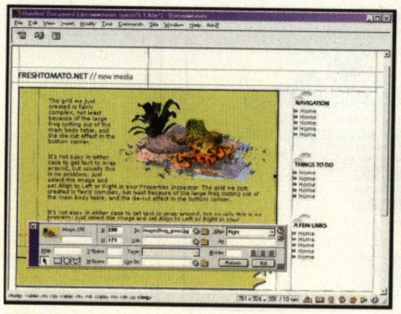
9 That's almost it for the grid: you just need to add your navigation. We didn't use tables for this at all, just style sheets with a graphic for each of the headings. If your page looks wrong, check it against the one on the CD, 4.9.htm.

Part 5: Wraps, bleeds and cuts

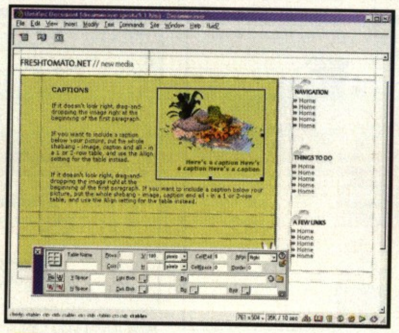
Cut-throughs, like the frog in our interface design, are just like bleeds, only more complex

Computer Arts forum

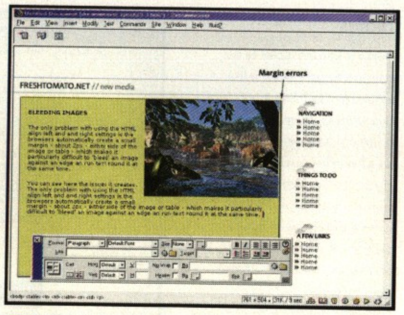
If you get stuck, don't worry: head back a step or two and see whether you've followed the tutorial correctly. If you're still stuck, try head off to the *Computer Arts* forum at www.computerarts.co.uk/forum where you can see if there's any messages on the subject, or post your own.



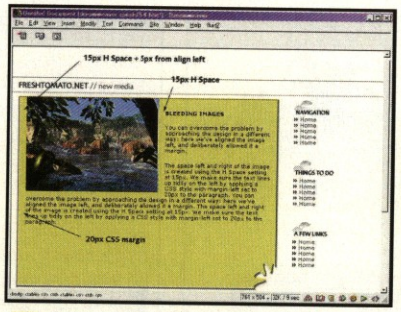
1 The grid we just created is fairly complex, not least because of the large frog jutting out of the main body table, and the die-cut effect in the bottom corner. It isn't easy in either case to get text to wrap around, but usually this is no problem: just select the image and set Align to Left or Right in your Properties Inspector.



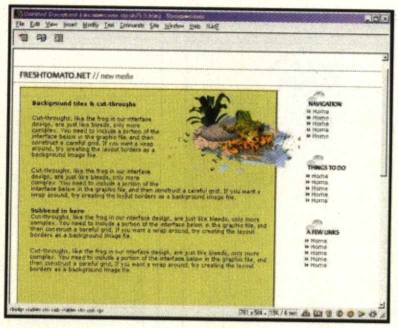
2 If it doesn't look right, drag-and-drop the image right at the beginning of the first paragraph. If you want to include a caption below your picture, put the whole thing, image, caption and all, in a 1 or 2-row table, and use the Align setting for the table instead.



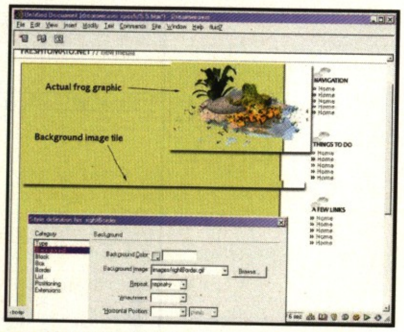
3 The only problem with using the HTML Align Left and and Right settings is that the browsers automatically create a small margin of about 2px, either side of the image or table, which makes it difficult to 'bleed' an image against an edge and run text round it at the same time. You can see here the issues it creates.



4 One way round this is to approach the design in a different way: here we've aligned the image left, and allowed it a margin. The space left and right of the image is created using the H Space setting at 15px. Make sure the text lines up tidily on the left by applying a CSS style with margin-left set to 20px to the paragraph.



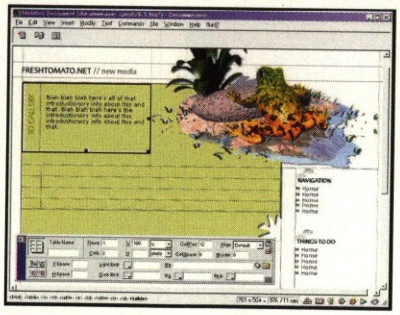
5 Cut-throughs, like the frog in our interface design, are just like bleeds, only more complex. You need to include a portion of the interface below in the graphic file, and then construct a careful grid. If you want a wrap around, try creating the layout borders as a background image file.



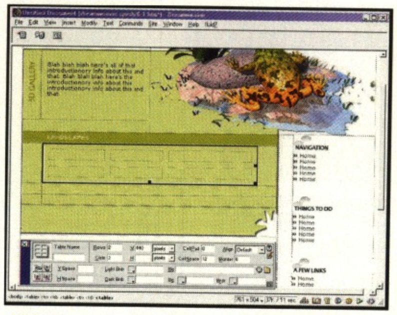
6 This is a similar technique to the one we used for the shadow at the bottom of the page in the interface design, to make the die-cut effect possible. Although the background graphic seems large, its file size is less than half a KB: just a few sharp, flat colours compress well as a GIF.

Part 6: Completing the design

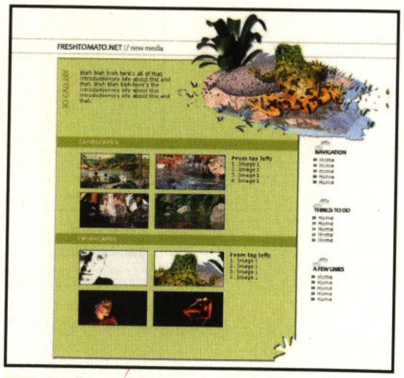
So now we've made the grid, and explained how to get the results you're after. All that's left is to add in the content…



1 The page title and intro area is created using a single table of two columns, 100 per cent wide with 12px cell padding. The heading itself is a graphic (you'll have a job trying to get HTML text on its side) and the spacing of the columns is automatically balanced.



2 The section heading is a simple, coloured-up cell with HTML text and a CSS style applied, although you might want to use graphics or try another cut here. The table that holds the images, meanwhile, is two rows by three columns, with 10-pixel cell spacing to control the positioning.



3 Finally, combine the right-most two cells of this table and set Align to Top, for the text. Put your images in place, and you're done. ca

MACFORMAT
GETTING THE MOST OUT OF YOUR MAC

OVER 30 NEW PRODUCTS TESTED! | ADOBE ILLUSTRATOR 10
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FASTEST EVER MAC!
Optimise and improve your Mac with our essential 12-page guide Starts on page 26
Boost performance
Streamline your OS
Free your memory
Keep data safe
Increase storage
30-PAGE SECTION!
HOW TO...
PLUS:
COLOUR INKJET SUPERTEST!
TECHNICAL HELP
OVER 60 NEW PRODUCTS TESTED!
DIGITAL SOLUTIO
BIGGEST EVER MASTERCLASS!
HOW TO:
45 NEW PRODUCTS REVIEWED
QUARK 5 | MS OFFICE v X
Your lif
EXCLUSIVE! WE LOOK AT OS X.1 AND
HOT ST

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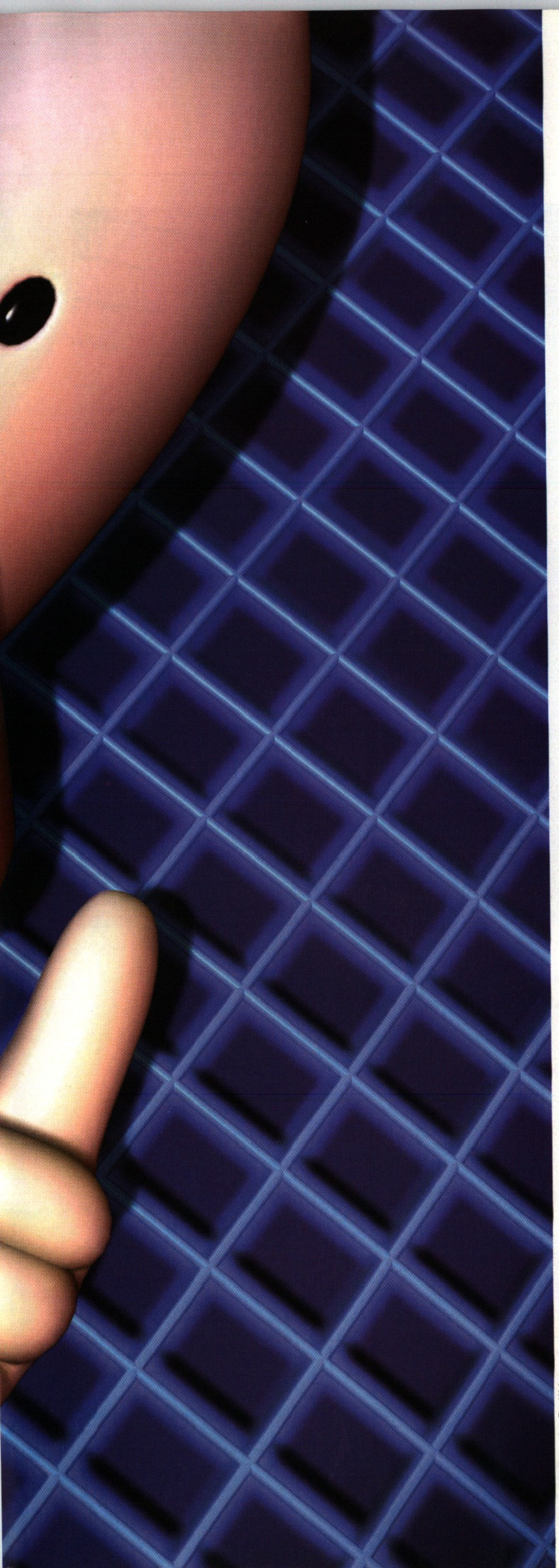


Illustration: Ben Webster

3D skills

Traditionally the trickiest and most time-consuming area of digital creativity, 3D can also be the most rewarding, if you know how...

88 **Staged lighting**

92 **Bryce 5**

96 **3D camera techniques**

102 **Photorealism**

106 **Character Studio: Emotion**

What you'll need

To follow most of the tutorials in this section, you'll need a good pro-level 3D application such as *Cinema 4D XL*, *3ds max* or *LightWave 3D*. For the Emotion tutorial you'll also need *character studio* for *max*, or the demo.

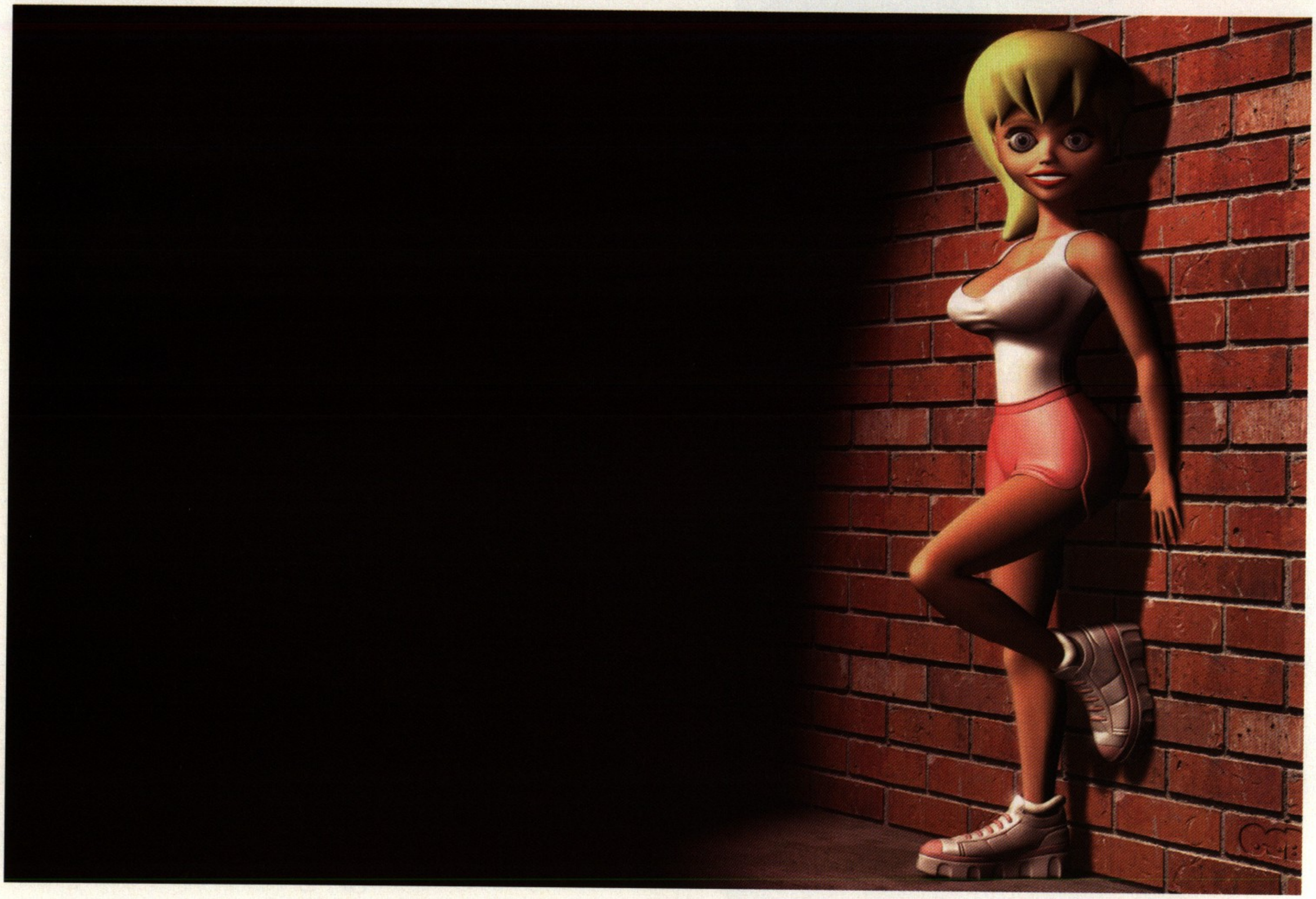


Illustration: Bill Fleming [e] bill@komodostudio.com

Staged lighting

Creating powerful, character-based 3D illustrations requires strict attention to lighting details. In this tutorial, we show you the key techniques for achieving successful compositional lighting in your images…

When you're creating 3D images, lighting is the most important aspect you need to consider. Lighting composition is more than merely illumination – it's the actual contrast of light in your work, a hidden element that directs our eye through the image and points us to relevant elements. And yet despite this importance, it's something rarely discussed when developing 3D illustrations. Classic artisans paid close attention to light composition in their paintings, but in this modern, hi-tech, fast-paced world, 3D artists tend to overlook the classic rules of art composition.

If you want the viewer to be motivated by your image, you can't simply drop a light into the piece and expect it to develop the correct lighting composition – this needs to be carefully planned. We show you how to bring the art of lighting composition to the realm of 3D, using essential techniques for successful staged lighting. The tutorial can be followed using any of the major 3D applications, as long as you know how to create and control lights within your chosen application.

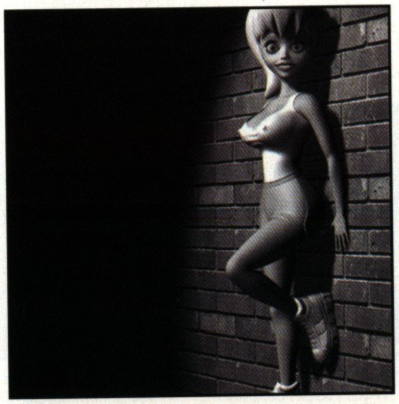
Artwork and expertise supplied by Bill Fleming. Bill is the President of Komodo Studio, specialising in photorealistic 3D characters for broadcast and film. You can contact him on [e] bill@komodostudio.com

Part 1: Determining composition

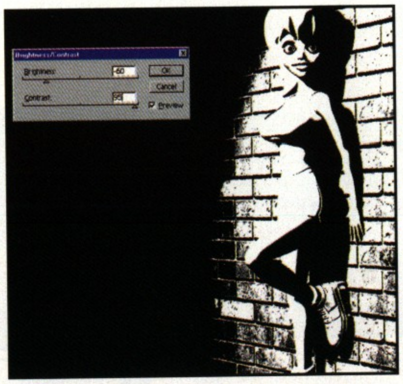
Before you can successfully use compositional lighting in your scenes, you need to fully understand how it works…

Testing

It's a good idea to frequently test the compositional lighting contrast of your illustration after you add each light. This gives you precise feedback on whether your light is benefiting the image or not. Testing may become tiresome, but it will save you a great deal of time in the long run, as poor use of lights will corrupt your illustration.



1 By looking at a final illustration, it is impossible to tell how lighting in an image is determined – this is something we need to get to grips with now. The easiest way to isolate the lighting composition is to first convert the image to greyscale.

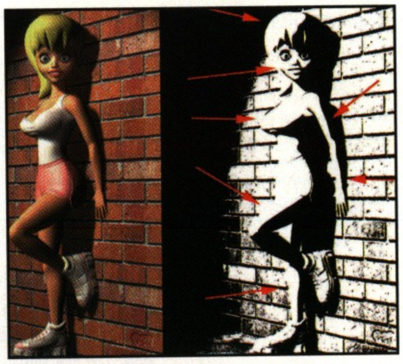


Brightness/Contrast

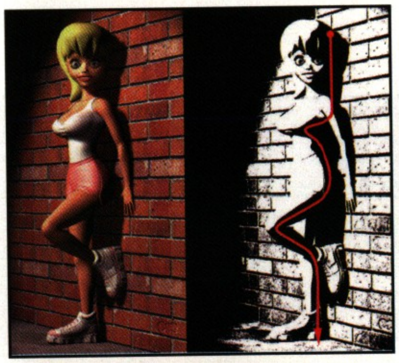
Brightness: -60

Contrast: 95

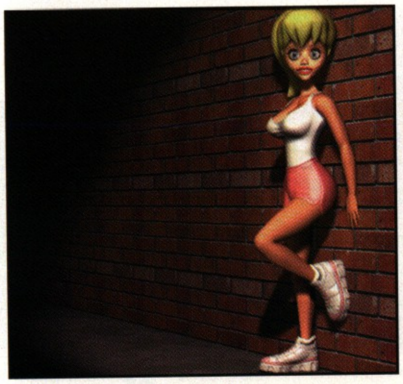
2 Next, adjust the brightness and contrast levels until you have a black and white image with stark contrast. In the case of our example the brightness was set to –60 and the contrast to +95. The resulting image shows the light composition of the illustration.



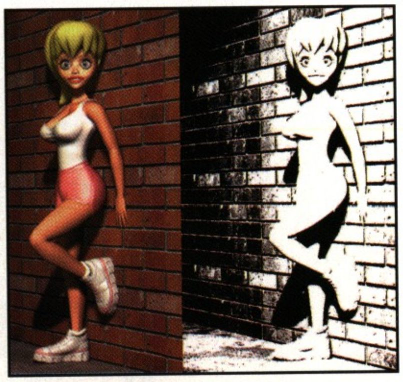
3 We can clearly see which details of the character are highlighted for the viewer, as indicated by the arrows. From our view the left side of the body is highlighted, with the shadow on the right framing the character. The viewer's eyes are drawn to the character, and the highlighted area forms a pleasing line down the image.



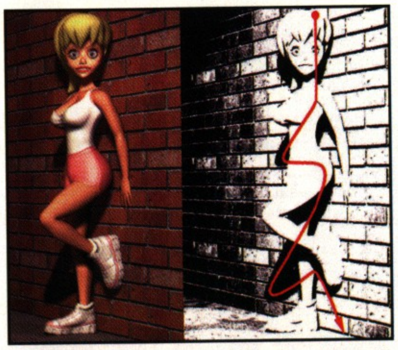
4 Here we can see the light composition path, which illustrates how the viewer's eyes will move through the illustration. The eyes follow the shadow line of the compositional contrast. Notice how the path is smooth and doesn't backtrack – you don't want the viewer to move back up the image, as this is just awkward.



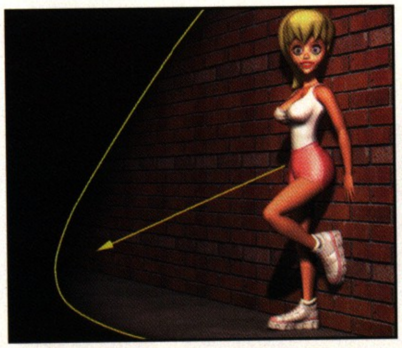
5 Some might think that illuminating the character from the front will resolve the need for complex character lighting, but as we see in the example, it doesn't create a dramatic image. If we test the light composition of the image it will clearly show the flaws.



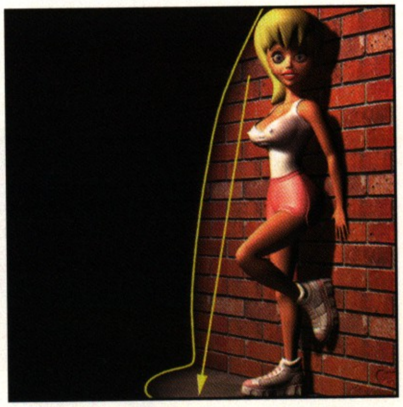
6 The light composition shows that the character is too illuminated, and blends into the wall behind it. There isn't enough light contrast in the image for it to be appealing to the eye. Also, the shadows on the left of the character fight the shape of her pose, making it uncomfortable to view.



7 Taking a closer look, the light composition path is awkward, darting in and out too severely and moving the viewer sharply up and down the image. It also moves the viewer radically from the left to the right of the character, making it very difficult to take in her detail and personality. The shadow arc of the illustration is also at fault, as we will see next.



8 The shadow arc of the spotlight is a crucial aspect of light composition. In the example where the light is parallel to the character, the shadow arc is deep into the left side of the screen, directing the viewer's eyes into dead space. This isn't proper light composition, unless there was something on the left side that we wanted the viewer to see.



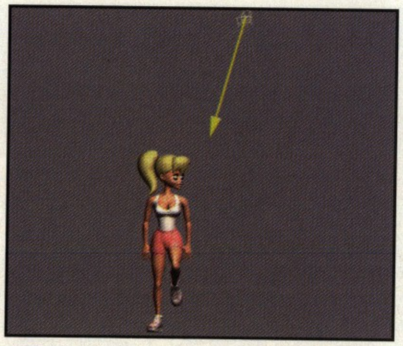
9 When we examine the shadow arc of the properly illuminated illustration, we can see that it follows a line from the character's head to its feet. This parallels the actual light composition path that the viewer's eyes follow.

Part 2: Proper staged lighting

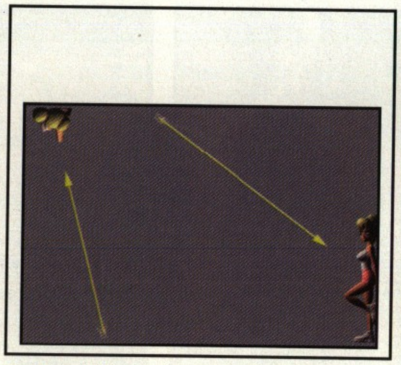
To develop staged lighting you need to add one light at a time, then test the results before you move on to the next one…

Track results

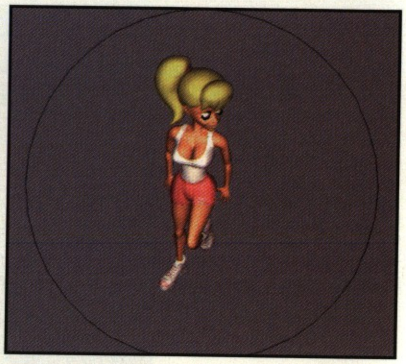
You can track your compositional lighting tests by creating a layered *Photoshop* file, with the layer names the same as the new light you are testing. This way you can see how each light changed the compositional lighting, which makes tweaking much easier than using guesswork.



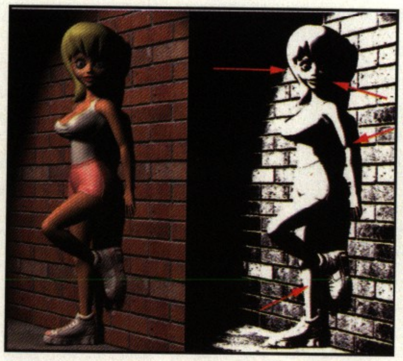
1 The first step in creating staged lighting is to set the ambient light to zero. Next, you need to create a key light spotlight set to RGB 242, 230, 215, which is the main source of illumination in the image. The key light is used to illuminate the essential elements of the character. An off-white colour is chosen to soften the colour of the light so it appears more natural.



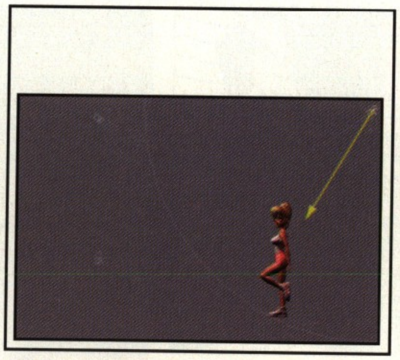
2 The intensity is then set to 120 per cent. The light value exceeds 100 per cent since we want to simulate a bright spotlight. The light is positioned to the right of the character at about twice its height. This will make the light appear as if it's coming from a light source such as a street lamp, a spotlight, or a nearby building.



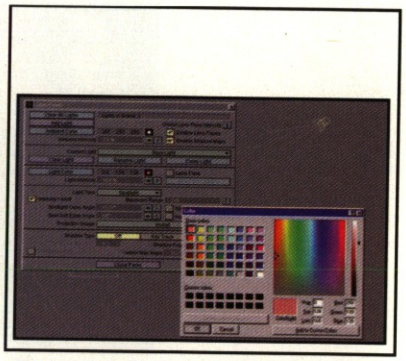
3 The cone angle is scaled to encompass the character's entire body. A soft edge is applied to the light to diffuse the cone edge. The spotlight is intended to simulate a light passing through a bulb cover that diffuses the light, so Soft Shadows are selected. A softer light is required to add a surreal edge to the character.



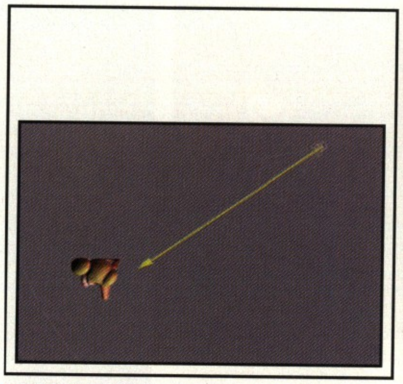
4 A test render shows the lighting on the left side isn't bad, but the dark shadowing of the right cuts into the body too much. Only one side of the face is illuminated, making her appear slightly evil. There is also a shadow line through the left arm, making it look severed, and the straight line on the right calf makes the leg look unnatural.



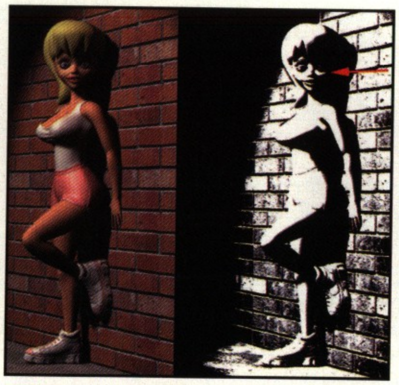
5 The next light added is a back-light spotlight, which softens the shadows on the back of the character and simulates the bounced light coming from the brick wall behind. The light is positioned to the right of the character, and aimed at the side of the head to help bring out the detail in the left side of the face.



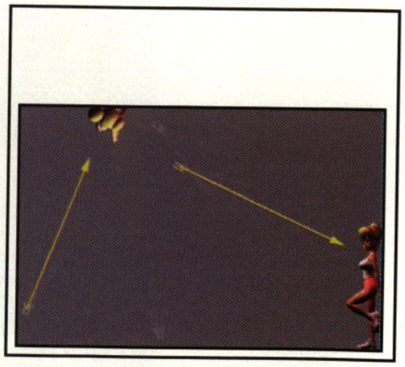
6 The light colour is set to RGB 218, 139, 139, which is the base colour of the brick wall. This light casts the colour of the wall on the back of the character. To create both realistic and surreal images we need to simulate bounced light, which adds depth to the image by softening shadows and adding subtle colours to the character.



7 The intensity is set to 80 per cent, with an intensity fall-off just beyond the character. This fall-off creates a softer light on the back of the character, and simulates the realism of bounced-light intensity fall-off. The light coming off the brick will quickly fade over distance.



8 The back light has helped narrow the shadow on the left side and illuminated the face more, but the highlight under her left eye makes it look like she has a black eye. More of the left side of the face needs to be illuminated, as well as tackling the other problems identified in step 4.



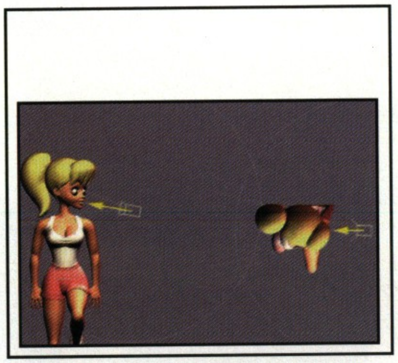
9 To help illuminate the right side (from our viewpoint) of the character, another back-light spotlight is added at the upper left. The light colour is set to RGB 237, 234, 169 to simulate bounced light from a building opposite the character. The intensity is set to 40 per cent, with a fall-off two metres behind the character.

Part 3: Creating bounced light

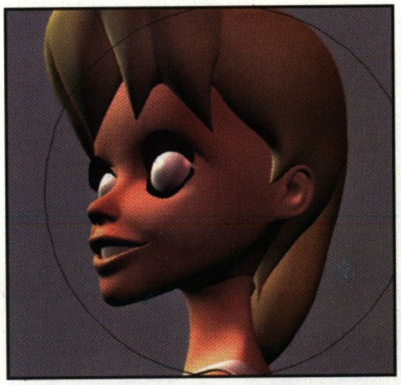
Artists will often stop after adding a single Fill light, when in reality it's necessary to add several to ensure the proper bounced light is represented…

Top to bottom

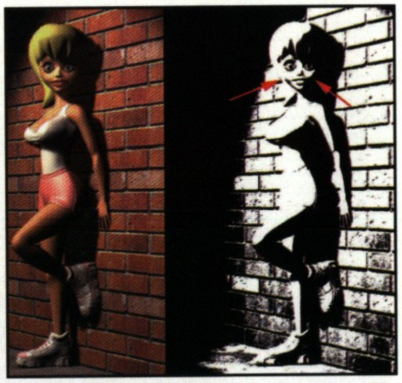
When tackling compositional lighting problems, you should solve them as they occur from top to bottom – this is so you can see how the new Fill light you add affects the problems you last solved. Jumping around from problem to problem makes it very difficult to see how the Fill lights affect one another.



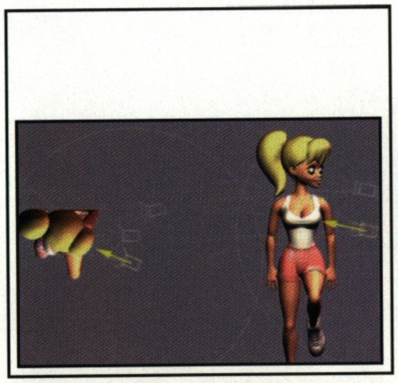
1 With the back light configured the next step is to add the Fill lights, which are meant to soften shadows and add bounced-light colour to the character. The first of these simply illuminates the top of the head; the spotlight is pointed down at the head with the colour set to RGB 237, 120, 120, the intensity at 40 per cent, and a fall-off at the feet.



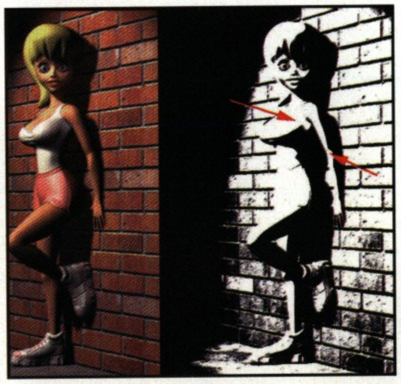
2 Next the light contrast on the face is improved by adding a face spotlight with the colour set to RGB 250, 216, 216, the intensity at 40 per cent and a fall-off of 50cm. The face light is placed parallel to the head and pointed at the chin. This is the first of two face lights.



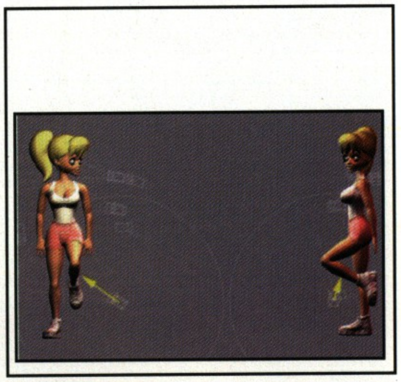
3 Now the face light is cloned and placed so that the 'light view' illuminates the full side of the head. Two face lights were used, since the front of the face requires more illumination than the back. The back would have a subtle reflected light, while the front is meant to accent the main light source.



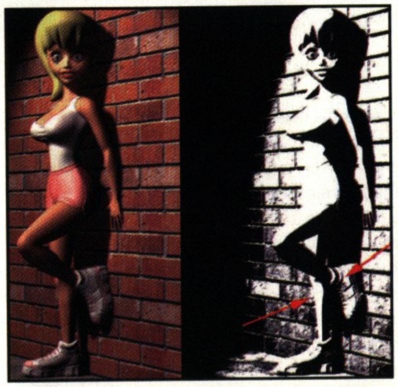
4 As you can see, the back light has effectively softened the shadows on the right side of the head, while the face lights have illuminated the left side, making the light contrast more appealing. The next step is to correct the shadow line of the left armpit and arm.



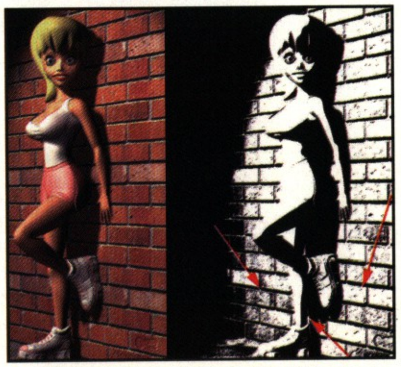
5 The chest light is a clone of the face light (RGB 250, 216, 216, intensity of 40 per cent and a fall-off of 50cm). The reddish colour simulates light bouncing off the brick wall. This light is placed on the right side of the chest, with the fall-off just beyond the body.



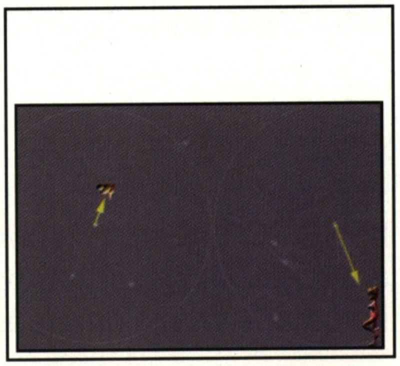
6 The chest light has illuminated the left armpit area, making the shadow line more pleasing. It has also removed the shadow line that made the left arm appear severed. The next Fill light added is the leg light, which will help contour the shadow line of the right leg.



7 The leg light is a clone of the chest light (40 per cent intensity and a fall-off of 50cm), with the colour set to RGB 215, 225, 221 to simulate the bounced light coming from the pavement. This light is placed opposite the left (bent) leg, with the fall-off just beyond the body.



8 The leg light has illuminated the left foot and created a nice rounded contour on the shadow line of the right leg. The curved shadow line on the right leg is important, since a straight line would suggest a flat calf muscle. The compositional lighting is nearly perfect; now add a bottom light to simulate the light bounced off the pavement.



9 Finally, a distant light is added directly beneath the character, under the street pointing upward, with the colour set to RGB 215, 225, 221 and the intensity at 20 per cent. This light illuminates the underside of the character and the lower bricks of the wall, completing the ideal light composition for this illustration. ca

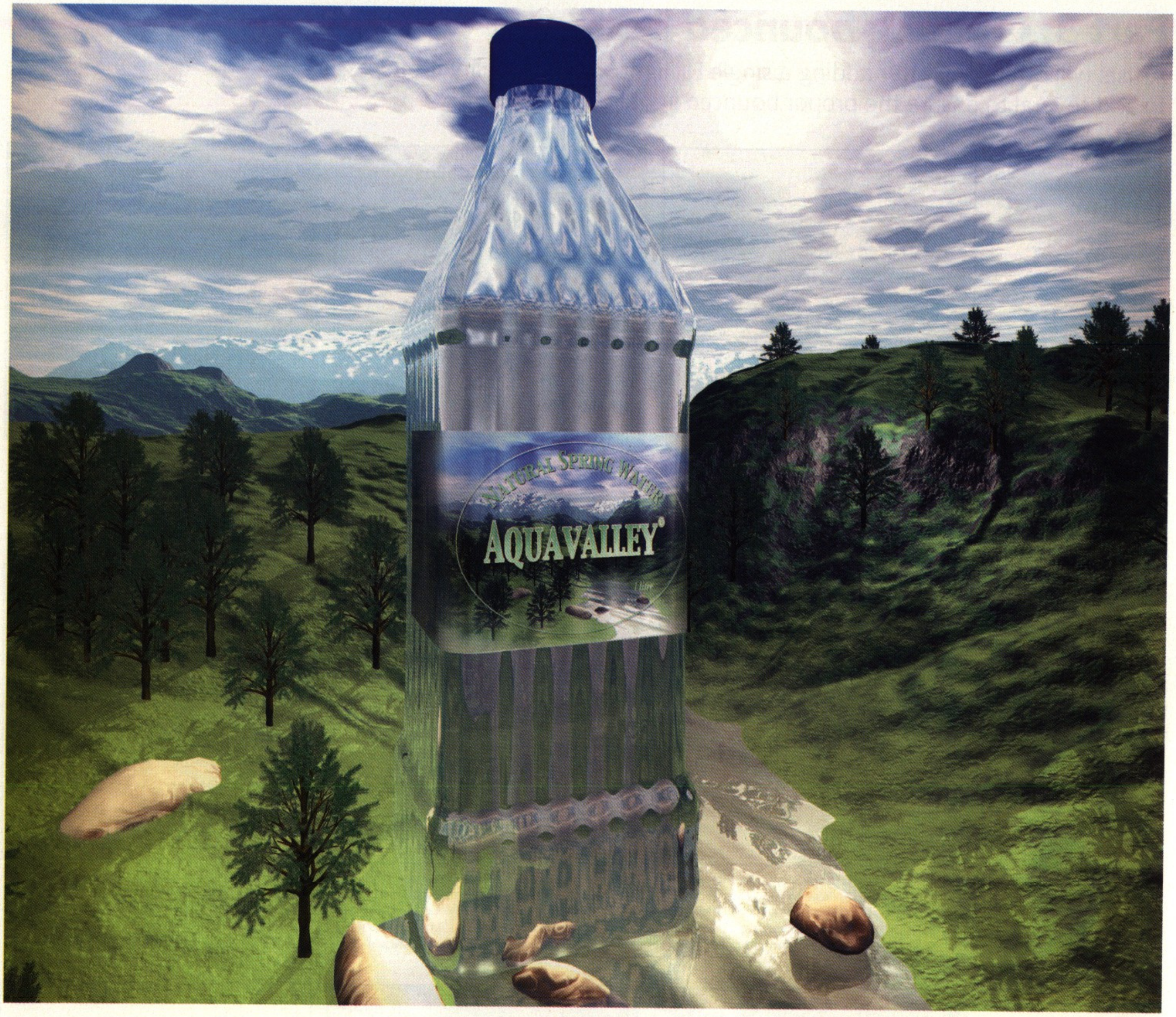


Illustration: Simon Danaher [e] simon.danaher@ntlworld.com

Bryce 5

In this 3D Skills tutorial we'll use *Bryce 5*'s advanced new features to create a landscape with a difference…

Bryce 5 is the latest version of the famous landscape-generation program and 3D renderer released by new owner, Corel. It features a streamlined interface, and a brand new procedural tree object that you can use to make entire forests, without the usual render performance hit you'd expect when creating extremely dense scenes.

Bryce is traditionally used to create natural-looking scenes, and this tutorial will be no exception. However, rather than simply creating a landscape image for its own sake, we'll show you how *Bryce* can be applied to a professional task. We'll use the updated version to create a package label for an imaginary brand of bottled water. *Bryce* has all the right features for this particular type of job so alongside the (Mac-only) demo of the package on your coverdisc, we've supplied all the steps and files you need to check out this great new version, and learn a few things along the way.

Demo and tutorial files

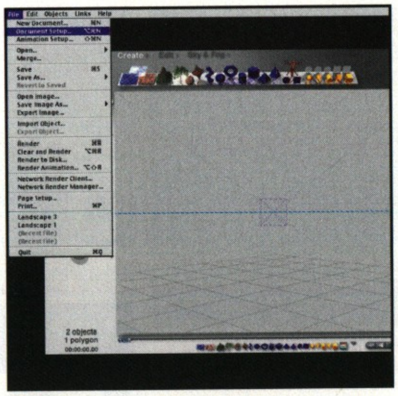
A demo version of *Bryce 5* (Mac-only) can be found on your CD. Tutorial files are also on the CD in Tutorials\3D skills\Bryce 5. Artwork and expertise supplied by Simon Danaher, [e] simon.danaher@ntlworld.com

Part 1: Setting up the document

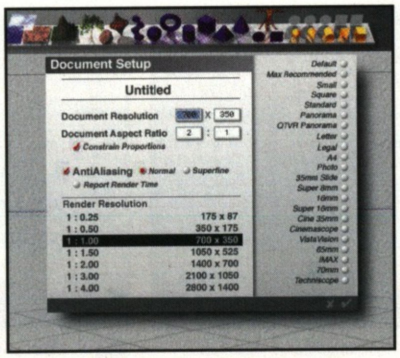
In this first stage, we'll be creating a new *Bryce* file and setting up the image size and aspect ratio…

Default set-ups

To return the interface back to its default set-up, Option-Space-click on a palette.


File
Edit
Objects
Links
Help
New Document… ⌘N
Document Setup… ⌥⌘N
Animation Setup… ⇧⌘N
Open…
Merge…
Save ⌘S
Save As…
Revert to Saved
Open Image…
Save Image As…
Export Image…
Import Object…
Export Object…
Render ⌘R
Clear and Render ⌥⌘R
Render to Disk…
Render Animation… ⌥⇧R
Network Render Client…
Network Render Manager…
Page Setup…
Print… ⌘P
Landscape 3
Landscape 1
(Recent File)
(Recent File)
Quit ⌘Q
Create
2 objects
1 polygon
00:00:00.00

1 In order to create the vista for our label we'll begin by setting up the new document. Choose Document Setup from the File menu.


Document Setup

Untitled

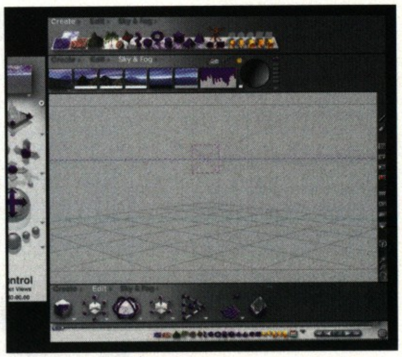
Document Resolution 700 X 350
Document Aspect Ratio 2 : 1
✓ Constrain Proportions

✓ AntiAliasing ● Normal ○ Superfine
○ Report Render Time

Render Resolution
1 : 0.25 175 x 87
1 : 0.50 350 x 175
1 : 1.00 700 x 350
1 : 1.50 1050 x 525
1 : 2.00 1400 x 700
1 : 3.00 2100 x 1050
1 : 4.00 2800 x 1400

Default
Max Recommended
Small
Square
Standard
Panorama
QTVR Panorama
Letter
Legal
A4
Photo
35mm Slide
Super 8mm
16mm
Super 16mm
Cine 35mm
Cinemascope
VistaVision
65mm
IMAX
70mm
Technicscope

2 The label will be a wide format so that the image wraps around the sides of the bottle. In the Aspect Ratio field enter 2:1, then set the resolution to suit your screen size for preview rendering and working. We've used 700x350.


Create
Edit
Sky & Fog

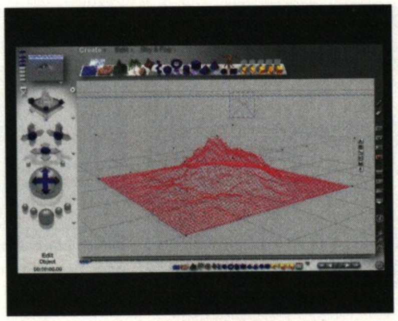
3 If you want to work more efficiently in *Bryce 5*, you can display all the work palettes at once by holding the spacebar and dragging them. This way you can have the Create, Edit, and Sky & Fog palettes visible all at once.

Part 2: Creating the landscape

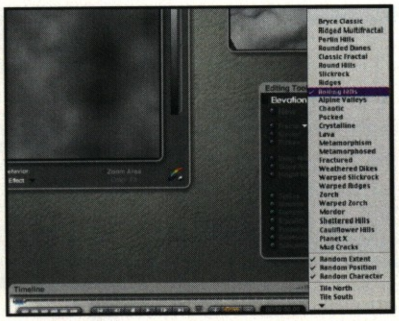
Here, we'll use the new Terrain Editor in *Bryce 5* to sculpt the perfect scenery for our label…

Previews

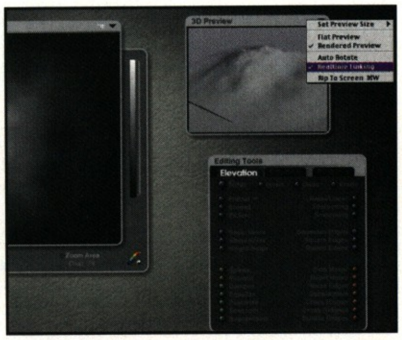
If you wish, the preview can be changed from the default flat render to a full preview from the pop-up menu.


Create
Edit
Sky & Fog
Edit
Object

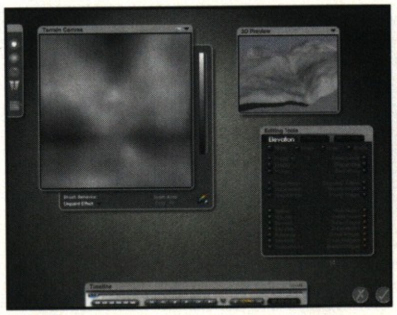
1 Begin the scene by creating the foreground landscape. Add a terrain object and click the E icon to enter Edit mode. The idea is to create a spot among some rolling hills where the spring will be. This will be in a natural depression flanked by hills.


Bryce Classic
Ridged Multifractal
Perlin Hills
Rounded Dunes
Classic Fractal
Round Hills
Slickrock
Ridges
✓ Rolling Hills
Alpine Valleys
Chaotic
Pocked
Crystalline
Lava
Metamorphism
Metamorphosed
Fractured
Weathered Dikes
Warped Slickrock
Warped Ridges
Zorch
Warped Zorch
Mordor
Shattered Hills
Cauliflower Hills
Planet X
Mud Cracks
✓ Random Extent
✓ Random Position
✓ Random Character
Tile North
Tile South
Editing Tools
Elevation
Zoom Area
Timeline

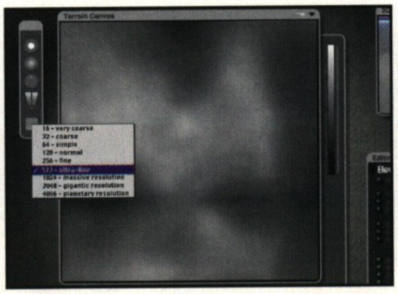
2 Here we'll reshape the terrain to begin creating the rugged landscape. Click the New button to start afresh, then from the Fractal pop-up menu, choose Rolling Hills. Click the Apply button (blue dot) until you get something you like.


3D Preview
Set Preview Size
Flat Preview
✓ Rendered Preview
Auto Rotate
✓ RealTime Linking
Rip To Screen ⌘W
Editing Tools
Elevation
Zoom Area

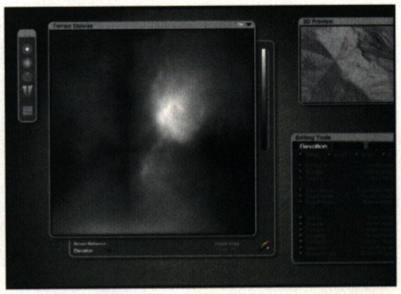
3 Smooth off the edges by applying Gaussian edges. Click and drag until you get the desired amount of fall-off. Enabling real-time linking shows you the effect on a wireframe as you drag.


Terrain Canvas
3D Preview
Editing Tools
Elevation
Timeline

4 Using a combination of Cross ridges and Bubble ridges, we're able to create a shallow valley or nook for the spring water run off. Use Dampen and Raise/Lower to control the height and Equalise to increase the contrast.


Terrain Canvas
16 – very coarse
32 – coarse
64 – simple
128 – normal
256 – fine
✓ 512 – ultra-fine
1024 – massive resolution
2048 – gigantic resolution
4096 – planetary resolution

5 Once you're happy with the general shape, you can increase the resolution of the terrain and add some finer details. Click the Grid at the bottom of the floating toolbar and choose 512 – ultra fine (if you have a fast computer you can choose 1024 – massive resolution).


Terrain Canvas
3D Preview
Editing Tools
Elevation

6 Add some detail to the terrain by applying small amounts of fractal noise, slope noise and mounds. You can also apply some erosion to create furrows. Don't add too much noise, because the mesh will tend to look spiky very quickly. This terrain is saved as the scene Valley1 on the CD.

Part 3: Middle and distant terrains

Next, we'll build up our *Bryce* landscape by adding extra terrain objects in the distance…

Terrains

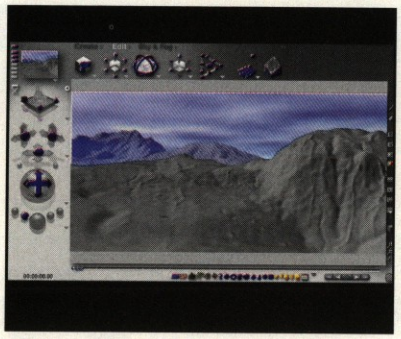
The exact placement of the terrains is not critical at the moment, since the camera angle has not been set.

OpenGL display

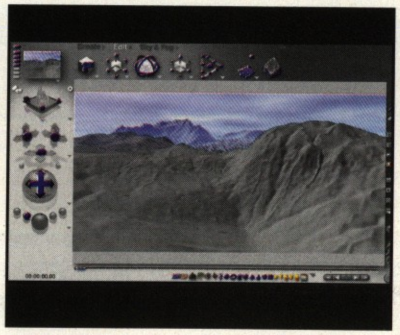
To get better interaction, and to save you from having to test render all the time, activate OpenGL display. Click and hold on the cube at the far right of the interface and select OpenGL.

Resolutions

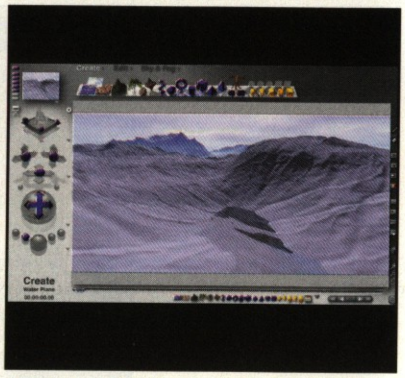
To improve the display of the terrains, you can increase their resolution. Click and hold the icon above the cube.



1 The next step is easier and a bit more fun. Add mountains to the far distance, using some terrains you have edited and scaled to a very large size. Use the top view to position the mountains more accurately, and a test render will show their reaction to the atmospheric haze.



2 Duplicate, scale and move the terrains to create a many-layered backdrop for the scene. Although you can add too many terrains, generally the more you add, the more depth and detail the image will appear to have. This is saved as the scene Valley2 on your CD.



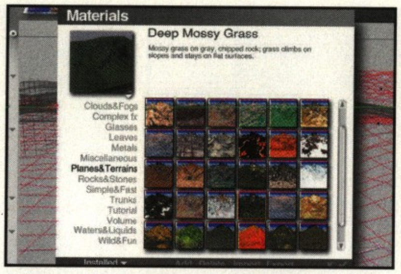
3 You can add the run-off water from the spring by introducing a water plane. Move the plane in Y so that it just fills the bottom of the valley. It's not a lake – just a small stream from the spring.

Part 4: Adding materials

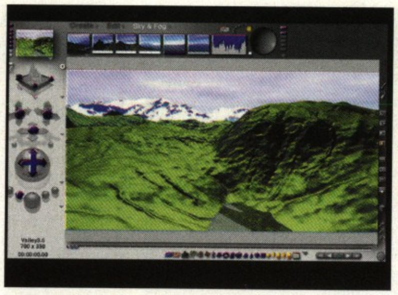
Now, we'll create the general look of the scenery by applying some of the package's pre-set materials…

Nano preview

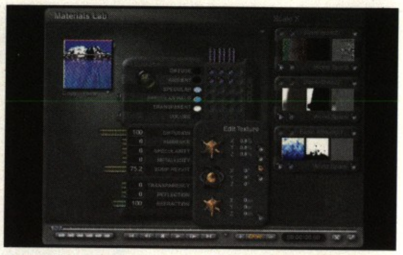
These values will be different if you're using your own scene. Experiment and use the nano preview to judge the correct coverage using the Actual Selection option.


Materials
Deep Mossy Grass
Mossy grass on gray, chipped rock; grass climbs on slopes and stays on flat surfaces.
Clouds&Fogs
Complex fx
Glasses
Leaves
Metals
Miscellaneous
Planes&Terrains
Rocks&Stones
Simple&Fast
Trunks
Tutorial
Volume
Waters&Liquids
Wild&Fun

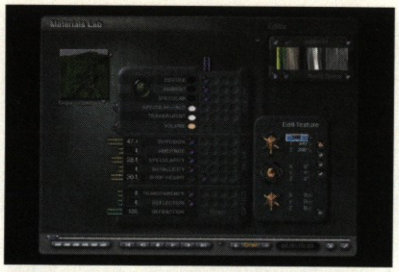
1 Next begin applying materials to the terrains. The foreground must be lush and green, though still rugged, while the mountains need to be a contrasting material. Select the foreground terrain and click the triangle next to the Edit menu. Click the Planets & Terrains category and choose the Deep Mossy Grass preset.



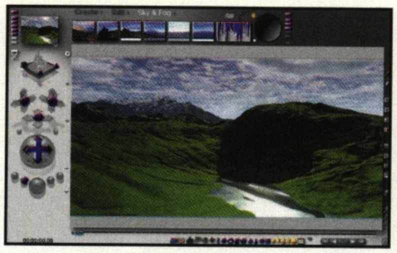
2 Apply suitable materials for the other terrains. The two distant mountains have the preset Distant Mountain, but due to their size the snow cover is far too extensive. To counter this, select the furthest one, and click the M icon to enter the Materials Lab.


Materials Lab

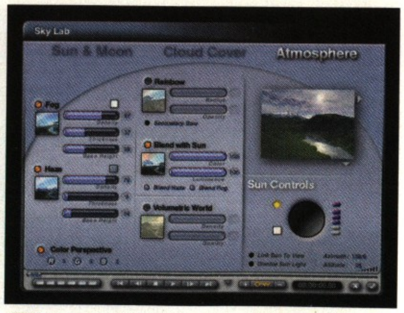
3 To see the mountain in the preview, choose Actual Selection from the pop-up menu (downwards triangle); the preview will be difficult to control because of the size of the mountain. Click the Editor button for the C-slot texture (the snow), then change the scale from 50 per cent to about 0.8 per cent. A small change for this value will make a big difference in coverage. Save the preset.


Materials Lab
Edit Texture

4 Repeat for the nearer mountain. This time the values will be about 3 per cent. The grassy material of the foreground terrain also needs editing, as it looks featureless and too smooth. Again you can fix this by editing the texture scale, though in this case you need to increase the value from 75 per cent to about 300 per cent.



5 We've also reduced the specularity and increased the bump of the material to boost its texture a bit more. However, spending more time on the materials will be a waste if we don't first set a rough lighting scheme. We want the sky to look fresh but quite brooding, and to set the sun quite low as if it's the early morning. This helps accentuate the bumps of the terrain, too.


Sky Lab
Sun & Moon
Cloud Cover
Atmosphere
Fog
Haze
Rainbow
Blend with Sun
Volumetric World
Color Perspective
Sun Controls

6 Fine-tune the lighting by entering the Sky Lab. Here we can adjust the haze more precisely and achieve a better cloudscape. Raise the Haze base height, then adjust Fog so that you get a morning mist over the water.

Part 5: Final renders

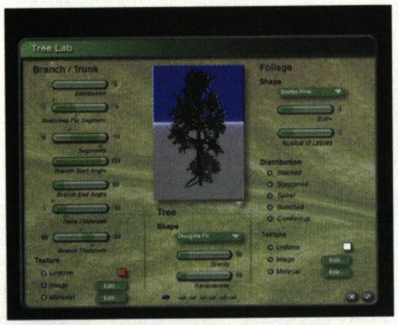
Finally, we'll create the last renders for the scene. A natural spring wouldn't be complete without some surrounding trees…

Smoothing DXFs

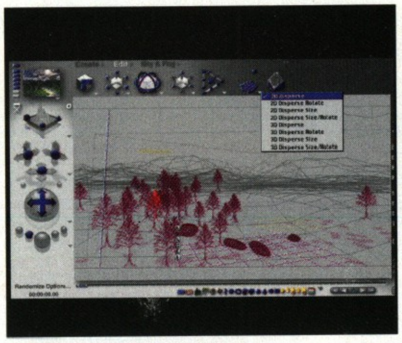
To smooth imported DXFs, click the E icon when they are selected and in the small editor that appears click the Smooth button.

Adding lights

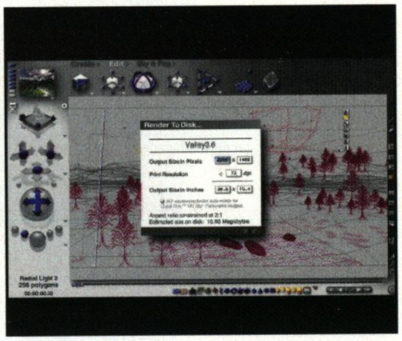
To accentuate the foreground, there's nothing stopping you from adding a few judiciously positioned lights.



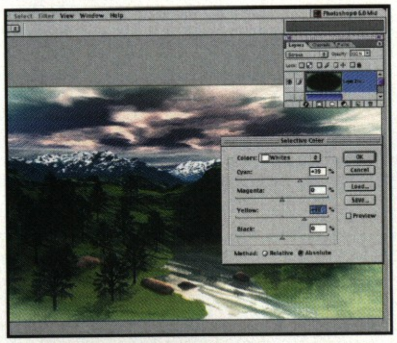
1 The final detail is to add trees and some rocks to the foreground. The rocks are simply added one by one and positioned. To create the forest of trees, first add a single tree. In the Tree Editor (click the E icon), choose Douglas Fir for both the Tree and Foliage Shape. Edit the setting to get a fir-like shape. One of the most important parameters for this is the Branch Start angle, which should be at least 90 degrees.



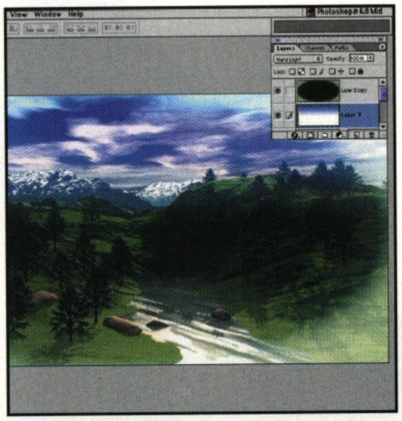
2 Once you have the right shape you can make copies of the tree. Choose Multi-Replicate from the Edit menu, then enter a value of 30-40 and a scale value of 101 per cent. Make sure translation is set at 0. Click OK. The trees will be duplicated on the same spot, so to distribute them choose the 2D disperse option from the Randomise button and drag the blue dot.



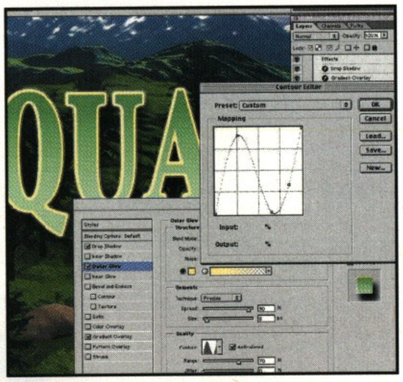
3 Once they've been sufficiently dispersed, move them up above the terrain and click the down arrow icon to land them. You'll then need to move them all down slightly to bury their roots. Move individual trees that are not in the right place by hand. Finally, set the desired camera angle and render out at high resolution (use Render To Disk). This is the background label of the bottle.



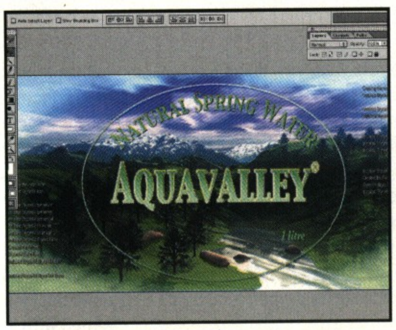
4 Open the render in *Photoshop* (our version is on the CD called ValleyBIG.jpg). We'll create the label first by adding a vignette. Create a new layer, fill it with white, then drag out an elliptical marquee and fill this with black. Change the layer mode to Screen and blur the layer. Apply Selective colour adjustment on the whites and neutrals to get a green that blends well with the image.



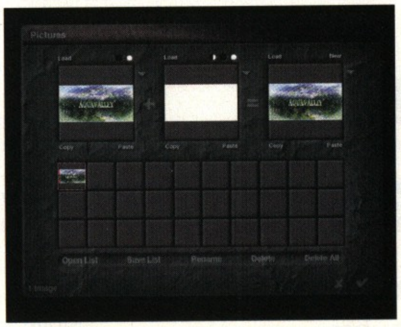
5 The sky looks a bit too gloomy, so next we'll add another layer and apply a blue to transparent gradient. Apply this in Hard Light mode and adjust opacity to recolour the sky.



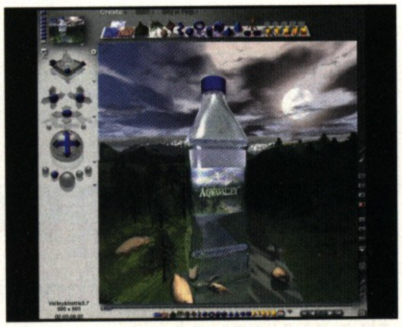
6 Now you can add the text layers. We've used an all-caps font for the main logo, then applied Layer Styles to make it stand out from the background. By adjusting the curves of an Outer Glow effect, you can create an interesting double outline for the text.



7 The text was further enhanced by applying a Gradient Fill using Layer Styles. Other elements include stand-in side panel text, and an oval frame, again with Layer Styles (dropshadow, Gradient Fill, etc). This is the last stage for completing the label, but we continued to make a poster ad using a model of the water bottle and label. The image was then saved out as a pict file, to be applied as a texture map to the bottle object.



8 In *Bryce*, create a new file and import the Bottle2.dxf file from your CD. This is a model of a plastic bottle with separate label and cap. Select the Label object and click M to go into the Materials Lab. Click the first empty slot next to the Diffuse channel, and a procedural texture will appear. Change it to a pict image by clicking the P button. Click the Pinkish button to enter the Pictures room, then load your valley label (or the one on the CD).



9 Apply using cylindrical projection and adjust the scaling and position. Apply a water material to the bottle and a simple plastic to the cap. Save the scene. Re-open the main Valley *Bryce* file and choose Merge from the File menu, then navigate to the bottle scene. Once loaded the bottle can be positioned in the scene (OpenGL helps), lit and rendered using a 1:1 aspect ratio. See the final scene Valley&Bottle on your CD. ca

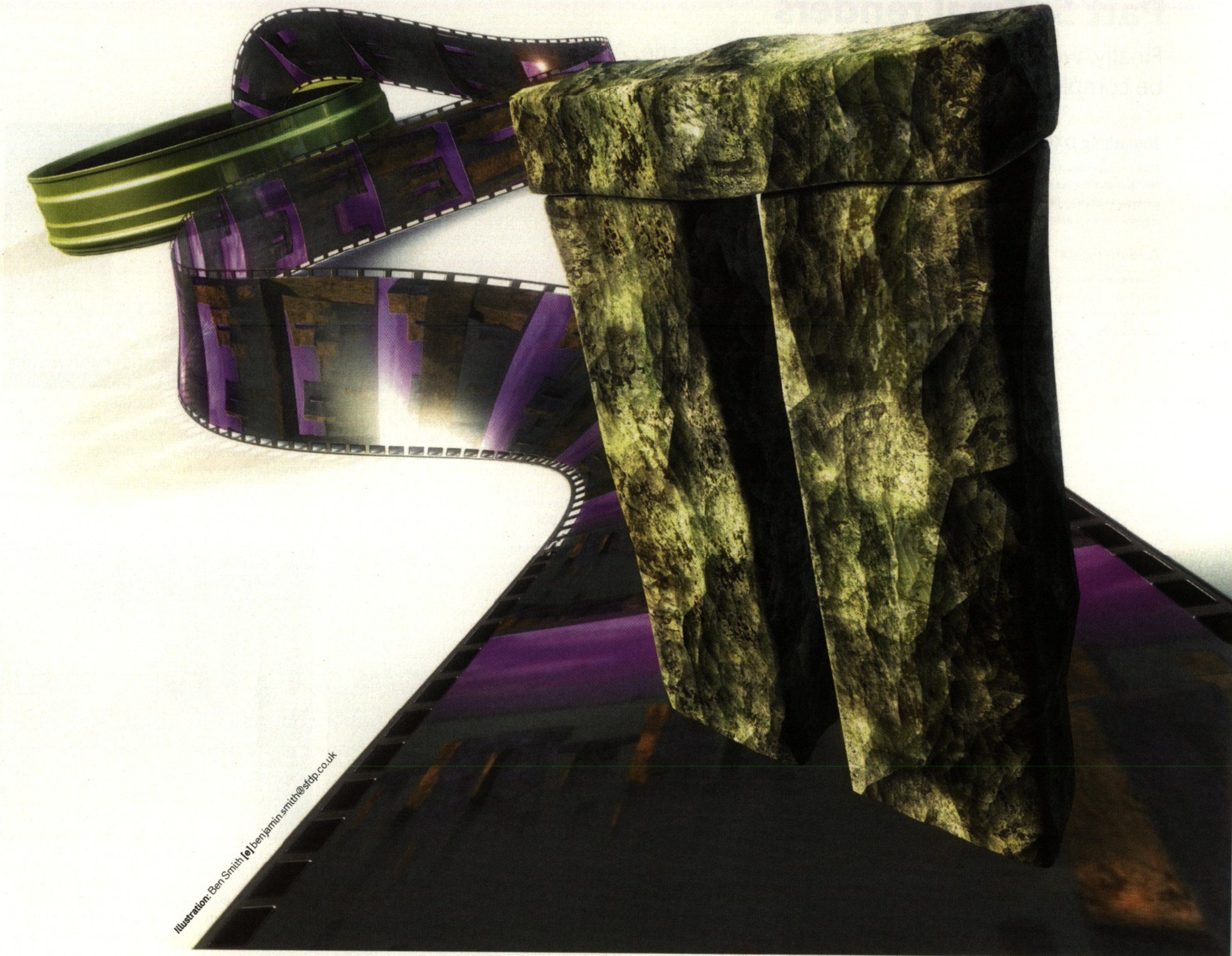


Illustration: Ben Smith [e] benjamin.smith@sfdp.co.uk

3D camera techniques

Here we show you how to increase the realism of your scenes, by applying the skills of a real-world camera operator to 3D graphics…

The virtual camera of the 3D world is different from a real camera in many ways. For a start, the virtual lens can be positioned anywhere in the scene and moved in any way, without the physical constraints of a real camera's size and weight. Furthermore, 3D artists don't need to worry about factors such as exposure or depth of field when rendering their images.

In this tutorial, we'll be creating a short sequence suitable for a TV documentary, showing the ancient monument of Stonehenge as it would have appeared 3,000 years ago. Since Stonehenge is an inherently static subject, we will have to rely on animating the camera to present it to the audience. Because the producers of the documentary will inevitably want to play the footage under a voice-over, the sequence is going to be very slow and laid-back.

We'll take you through the areas to consider when creating your animation. By applying 3D camera techniques, you can create shots that appear more realistic, looking as though they were filmed with a real-world camera.

Tutorial files

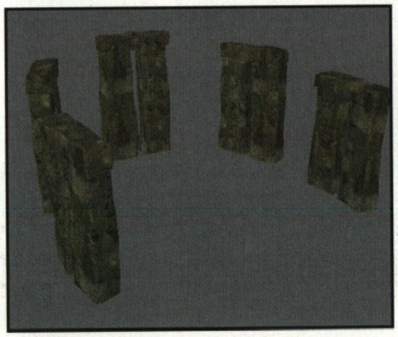
You'll find all the tutorial files you need on your coverdisc in the folder named Tutorials\3D skills\3D camera techniques. Artwork and expertise supplied by Ben Smith, [e] benjamin.smith@sfdp.co.uk

Part 1: Preparation

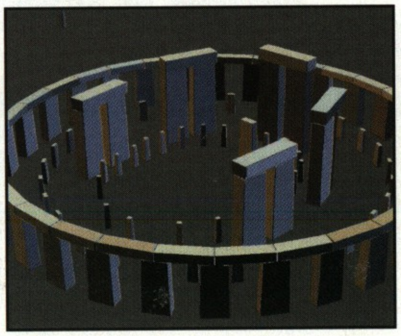
Before you start generating your animation, we need to take a look at the tutorial files and create a base scene…

What application?

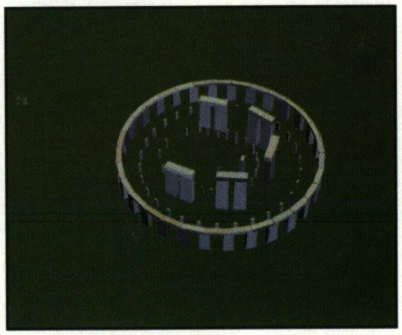
Though this tutorial project was created in *LightWave*, it has been written in such a way that it can be followed in any major 3D application including *max*, *Cinema 4D* or *Maya*. You'll need to be familiar with your software's camera management tools before learning these cinematic techniques.



1 Locate the high-polygon models of Stonehenge on this month's cover CD, along with an image map of stone taken from photographs of the real Stonehenge. They have been provided in LightWave 5.x and OBJ format.



2 For the purposes of creating the camera work, however, it's better for you to work with the low-polygon models contained in the Low folder. Replace the low-polygon models with the high-res ones when you've finished the animation.



3 Before starting any camera animation, create a base scene with just the low-polygon model and a default camera and lights. Load this scene and re-save it with a new file name every time you create a new shot.

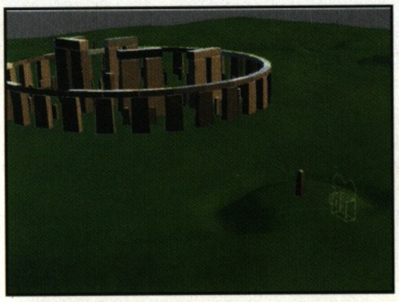
Part 2: Setting the scene

Now we'll set the overall mood of the scene with a reveal shot, then lead the viewer into the rest of the sequence…

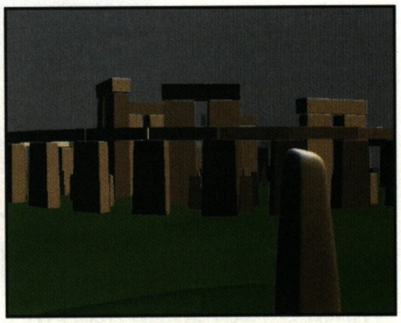
Realistic speed

When panning to follow a fast-moving object like a race car, always let the camera lag a little behind the object as it passes. In reality, camera operators can never pan the camera fast enough to keep the subject in view.

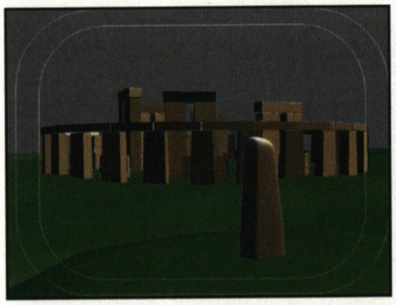
The first shot is designed to add a sense of mystery to the proceedings, and we'll create this by doing a dramatic reveal of the stones. A 'reveal' is basically a shot in which the subject matter is revealed to the audience for the first time. The idea is to start with the camera behind one of the surrounding barrows, then move it up over the barrow so that the stone circle is revealed to the audience. To add a bit of interest we'll concentrate on a part of the circle where one of the outlying Station stones is standing on the barrow. This will add an interesting foreground element and lead the viewer through to the background. Because we want this shot to end with a dramatic view of Stonehenge, we'll work this shot backwards, starting with the end position and then animating a start position afterwards.



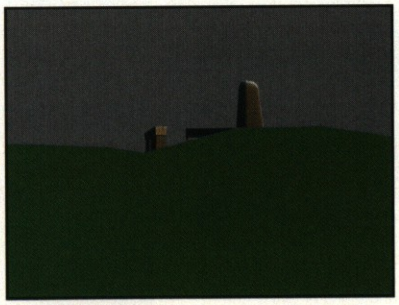
1 Move the time slider to about eight seconds, and position the camera behind one of the Station stones that stands on the barrow surrounding the monument. Line the camera up so the stone circle is in the background with the Station stone in the foreground.



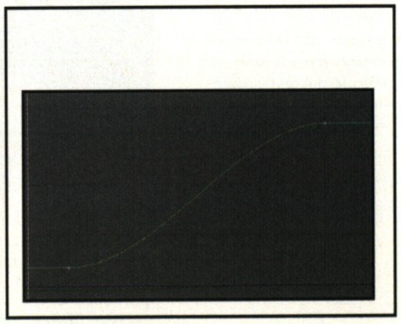
2 Because we want the whole of Stonehenge to be framed in the background, you might have to adjust the camera lens to fit it all in. We could alternatively move the Station stone further away, but since this is for a documentary that's a bad idea.



3 If your software has a Safe Area feature, this is a good time to activate it. On a TV set, the edges of the picture are cut off by the sides of the screen, and it's important to make sure the action is contained within this so-called Safe Area.



4 Next, move the time slider back to frame 0 and then move the camera down and back so that Stonehenge becomes hidden behind the mound. Tilt the camera up so that the Station stone is still visible over the top.



5 So that the camera seems to have a bit of weight to it, adjust the animation curves for its rotation and position so it eases in and out of the motion. Ideally the curves should start and end flat.

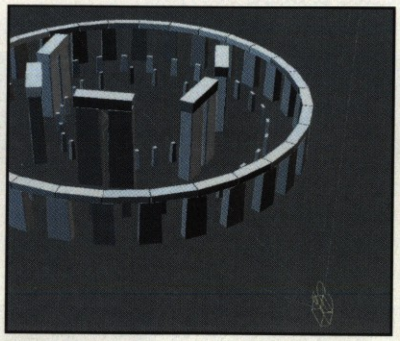
Part 3: Dolly shots

This technique enables us to move closer to the stone circle and pan around it…

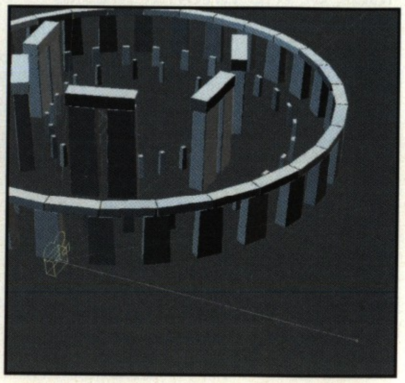
Zoom effects

Be extremely careful if you decide to animate the camera's field of view during a shot to create a zoom effect. You very rarely see this effect in films or TV, unless it's in news footage.

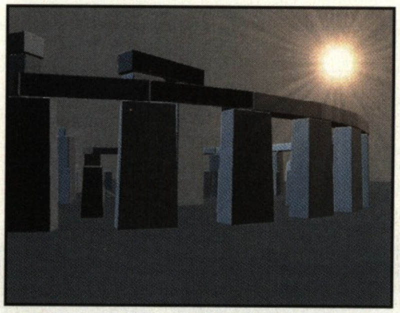
The next shot is designed to take the viewer inside the stone circle. We want the inside of the circle to appear quite mysterious and intimidating, so we'll slowly get closer to the stones and offer glimpses of what might be inside. To do this we'll imitate a common shot in film production: a dolly shot. It's called this because the camera is mounted on a little trolley (inexplicably called a dolly) on tracks. The camera can therefore move in a straight line, but can pan around as well. To add interest to this shot we'll put the sun in the background and let it pass behind the stones as we get closer, creating an interesting flickering effect.



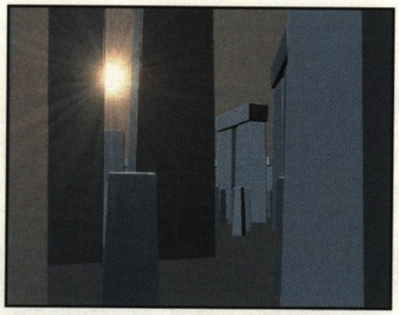
1 Starting with the base scene again, we'll position the camera outside of the stone circle, a little distance away, keeping it about 1.7 metres off the ground. This is roughly the distance of an adult's eyes off the ground, and will help to keep the stones in scale.



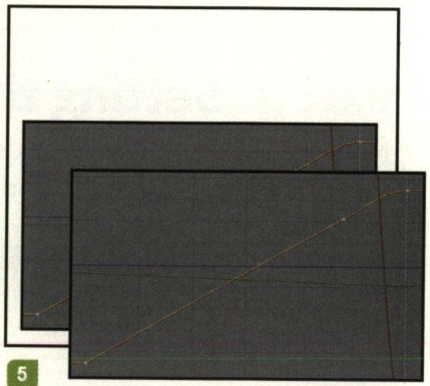
2 Move ahead 12 seconds on the time slider and move the camera right up to the monument, looking between two of the stones. This creates the straight-line motion of the dolly.



3 Position a light in the sky behind the stones to act as the sun. Set its brightness to zero per cent and apply a Flare or Glow effect to it. This light won't actually illuminate the scene, but it will provide some necessary detail.



4 Check the camera's rotation so that the sun object is positioned to flicker as the stones pass by. If need be, move either the camera or the sun to get the desired effect, but make sure the camera stays moving in a straight line.



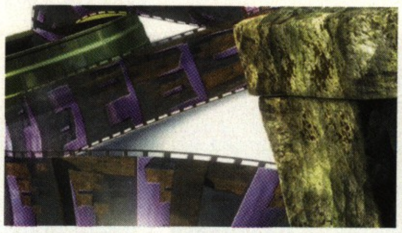
5 Adjust the camera's animation curves so that it stops smoothly. In this case, the start of the shot can

Part 4: Pans and tilts

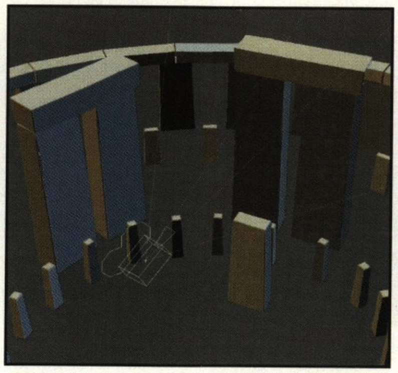
These shots can be used to give a sense of how tall certain objects are within your scene – in this case, the giant Trilith stones…

Camera shake

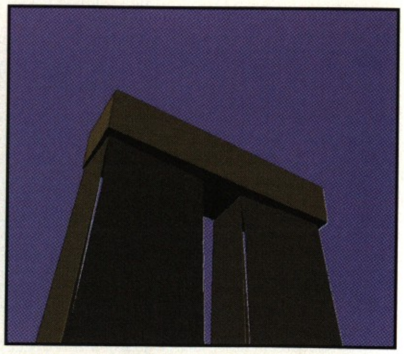
Adding a little random noise to the position and rotation of the camera creates a camera shake effect, which is great for adding impact to explosions and other violent events.



The next shot is located within the stone circle and is designed to show how the sun at the summer solstice shines through the stones, appearing to rise above one of the so-called Heel stones. Since the previous shot ends with the rear of two of the massive Trilith stones – the largest of the standing stones – we'll begin the shot from the other side of these and rotate around to reveal the rising sun. This kind of horizontal rotation is called a pan, and in this instance it's going to show us the view as seen from within the stone circle.

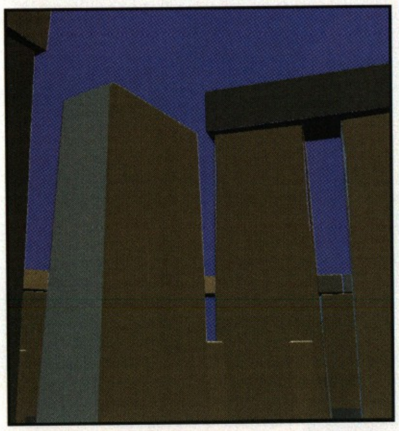


1 Position the camera 1.7 metres off the ground within the innermost circle of standing stones, so the Altar stone is to its right. Tilt the camera up to get a dramatic view of the towering Trilith stones.

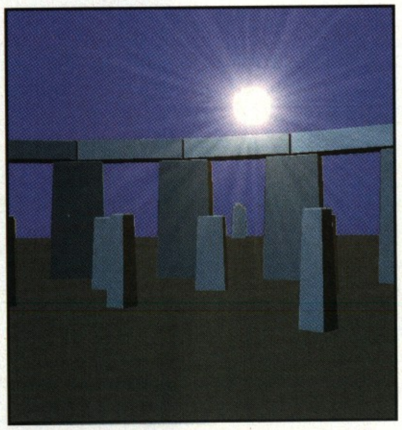


2 To make the Triliths look even more imposing, adjust the camera's field of view so the lens is wider, making the stones taper off into the distance. To add to the effect, you could also move the camera closer to the ground.

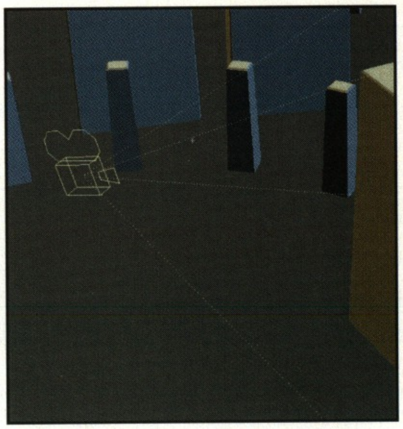
Part 4: Pans and tilts, continued…



3 Move to about four seconds on the time slider and move the camera back so the Altar stone becomes visible in front of the Trilith stones. Tilt the camera down so that the much shorter Altar stone is framed in view.



4 Move to ten seconds on the time slider and rotate the camera all the way to the right to face the Heel stone in the other direction. The stone should be visible between the others. If it isn't, just cheat and move it so it's in view.



5 Because the camera pans over quite a long distance, it passes the Altar stone too quickly. At four seconds, rotate the camera back to the left slightly so that it lingers over the Altar stone before starting to pan.

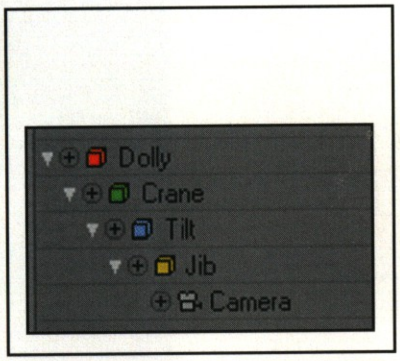
Part 5: Crane shots

To end the sequence, we'll rise high above the stone circle by using a crane shot. This enables us to see the monument as a whole…

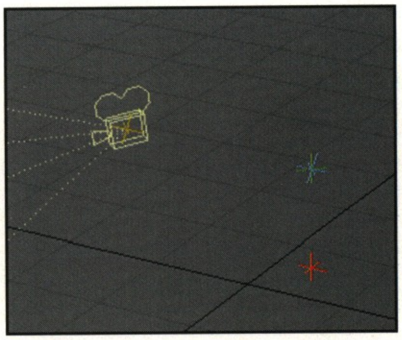
Atmosphere

The bank or roll channel of the camera's rotation is hardly ever used, as it tends to just make the floor look uneven. However, it can be useful for creating an unsettling atmosphere.

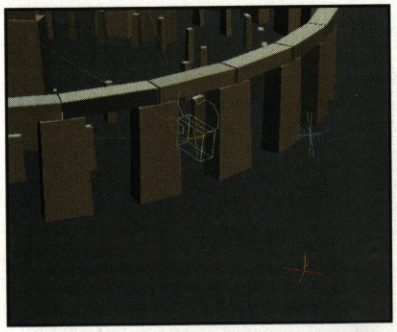
The final shot is intended to end the sequence, by taking the viewer outside the stone circle again and giving them a wide view of the stones. In order to see the layout of the stones clearly, we'll need to raise the camera into the air and look down on them. While this is easy in 3D, it's very difficult in the real world to raise a heavy film camera three storeys up in the air. The way to achieve this is with a Crane shot – thus called because the camera is mounted on the end of a tilting crane arm, which is in turn mounted on a dolly. While we could achieve this by just animating the camera as we have before, in this case we'll set up a virtual camera dolly.



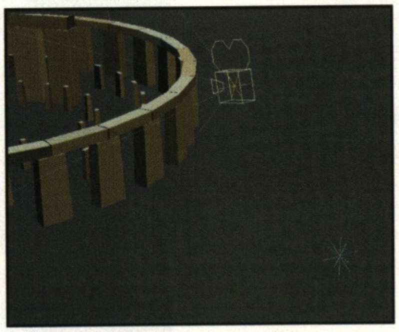
1 Create four dummy objects called 'Dolly', 'Crane', 'Tilt' and 'Jib'. Arrange them in a hierarchy as shown here. Parent the camera to Jib.



2 Move Crane five metres above Dolly and move Jib about eight or nine metres forward from Tilt, so you have an arrangement as shown above. You have now created a virtual camera crane.



3 To position your crane, move Dolly along the ground so the camera is positioned between two of the standing stones. If you need to move the camera closer to the ground, rotate Tilt so that the jib of the crane swings lower to the ground.



4 Move the time slider to around ten seconds and move Dolly back in a straight line from the stones. Rotate Tilt so that the camera is swung high up into the air. You'll need to rotate the camera as well, to tilt it down at the stones again.

5 Finally, render this final scene out as an animation, and try cutting the four shots together in an editing package such as Adobe *Premiere* to view the complete sequence. You will find the finished movie, complete with atmospheric lighting effects, on the coverdisc. It's called 'henge cinepak 85.avi'. ca

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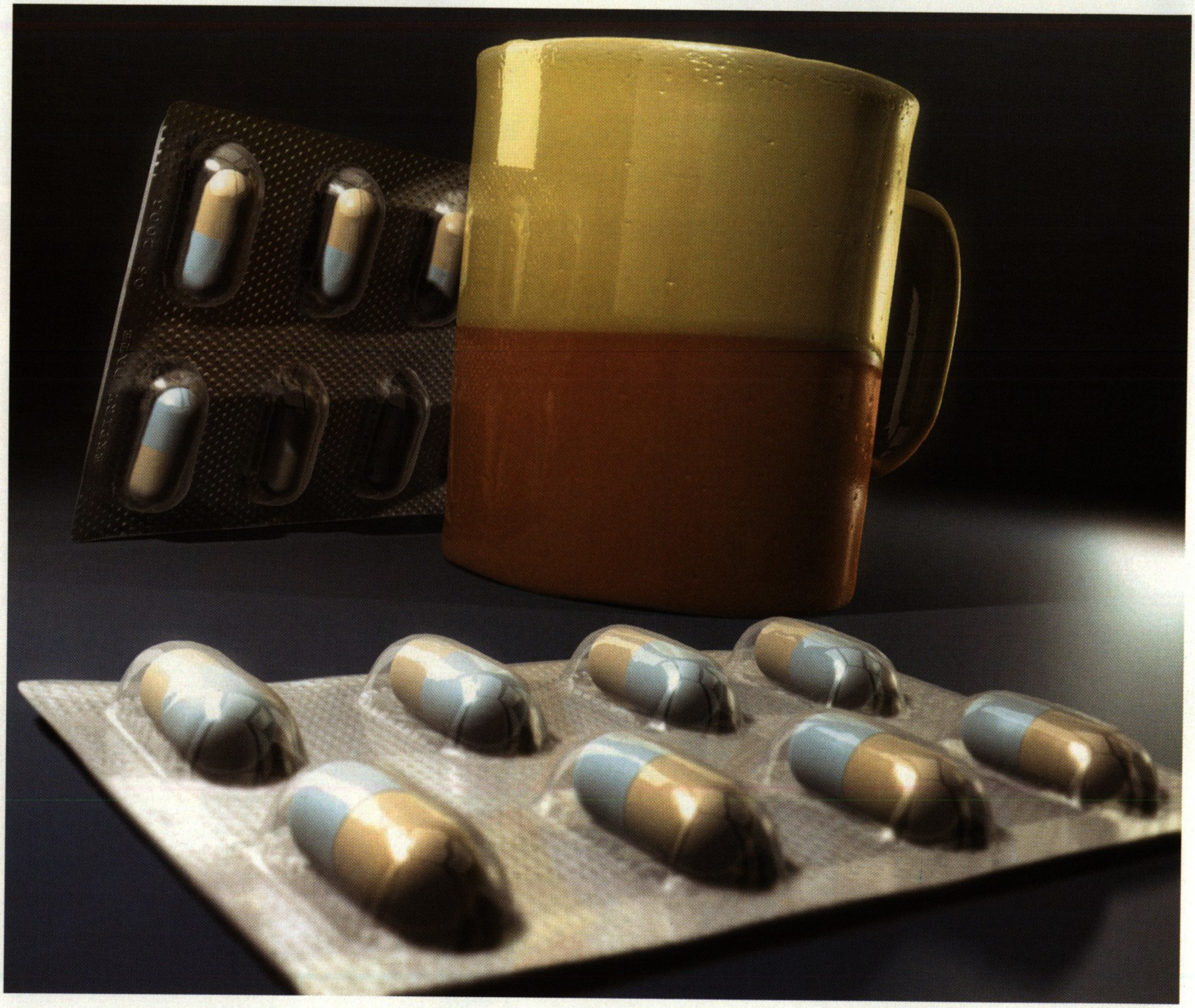


Illustration: Simon Danaher **[e]** simon.danaher@ntlworld.com

Photorealism

As a 3D artist you'll often be asked to produce photorealistic work, be it for a product visualisation, film effects or for advertising purposes. Here we show you some of the tips, tricks and techniques

The word 'photorealism' can be misleading. It's often used to refer to an image that looks – or should look – like a photograph, but this doesn't always mean the viewer should be convinced that what they see is 'real'. Photographs, film and video can look totally unreal, so the term can simply refer to something that mimics the attributes of photographic images, regardless of style.

As the 3D industry has gradually found its feet, photorealism as a means of justification has become less important, resulting in a trend away from this style. This probably has as much to do with audiences' acceptance of the use of CG imagery in popular culture as it has to do with 3D artists wanting to stretch the boundaries of their medium. But it's a vital string to your bow, and one you'll need for numerous real-life tasks.

This tutorial will show you techniques involved in creating an image with a high degree of realism. The subject is a simple, still life, rendered in *LightWave 7.0*. The techniques are specific to photorealism rather than *LightWave*, so you can apply them in other projects and applications.

Tutorial files

The files to accompany this tutorial are in the folder called Tutorials\3D skills\Photorealism. If you haven't got *LightWave 7*, you may be able to get a demo disc from a Newtec dealer. See the website for details [w] www.lightwave3d.com Artwork and expertise supplied by Simon Danaher [e] simon.danaher@ntlworld.com

Part 1: Creating an object

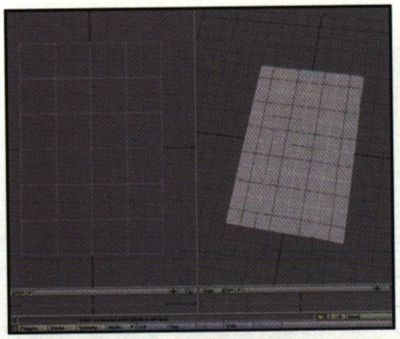
Our object will be a photorealistic pill packet, so we'll start by preparing the base model…

Displacement

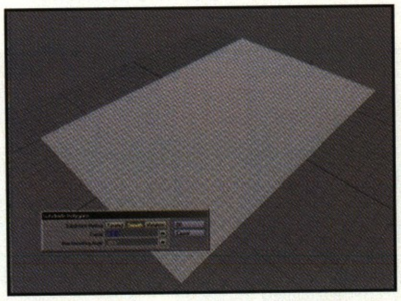
In step 3, if your displacement still looks too choppy just subdivide the mesh once more. Sub Patches are a better option, because we can set the render resolution independently from the display resolution.

Rounded edges

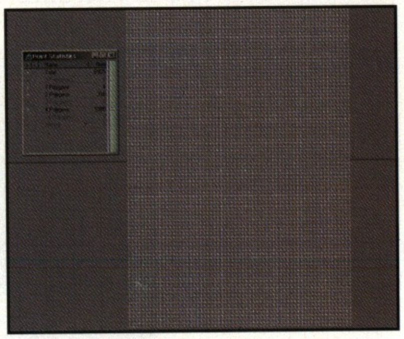
If you're working in *LightWave*, put the curve in a background layer, and use the Multiply>Drill tool on the *Y* axis in Core mode to trim the edges of the plane. If you use Sub Patches you'll get rounded edges anyway.



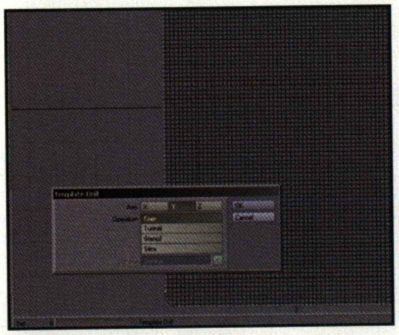
1 No matter how good the texturing and lighting is, if you don't get the models right the image will fail to be realistic. Begin by creating the tablet blister pack, which starts life as a simple polygon plane. Its dimensions are four units by six units, and we've subdivided it.



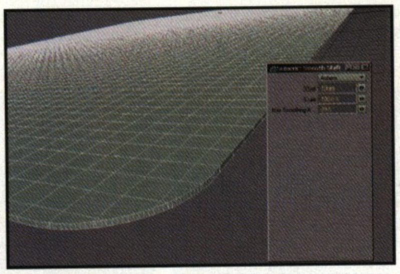
2 Rather than model the blisters by hand, we'll use a displacement map. The important part, is that for this to work you must have enough polygons. There are two approaches for this: subdivide the plane heavily, or use Subdivision Surfaces or NURBS with render-time subdivision options. To avoid any ambiguity, we'll directly subdivide the mesh.



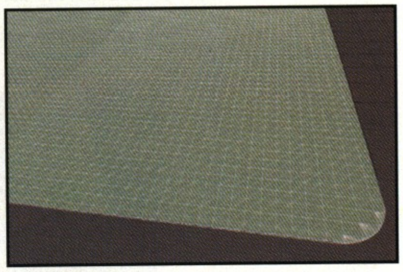
3 The final subdivision brings the poly count to around 6000. It's a dense mesh, but this is necessary for smooth displacement. What you don't want in an image such as this is to cut yourself short with object resolution. This is why NURBS or Sub Patches are more suitable.



4 To produce the corners, create a curve and use this to trim the outer edge. *LightWave* does this directly with a curve. In other applications you can do the same thing using a Boolean intersection with the curve extruded into a solid object.



5 Although the plastic is thin, it does have some thickness which you'll need to build in. First make a copy of the grid, then Extrude/Bevel/Smooth-Shift the copy a tiny amount to create a thin edge. If using NURBS you could use a trim curve to create the rounded perimeter, then extract this and sweep a short profile around it to create thickness.



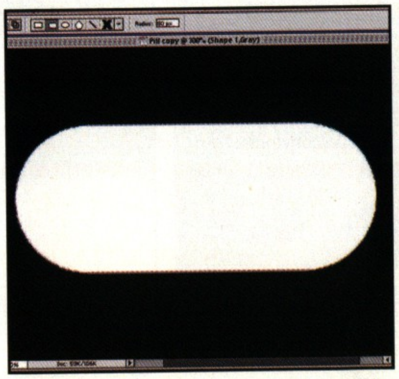
6 If using polygons, the next step is to triangulate the mesh prior to saving. Using displacement, there is a likelihood of non-planar polygons occurring. Triangles by their nature are always planar, so rendering artifacts will be eliminated. You'll find the two objects on your CD saved as PillBlisterFront.lwo and PillBlisterBack.lwo, and as Plastic.dxf and Foil.dxf.

Part 2: The displacement map

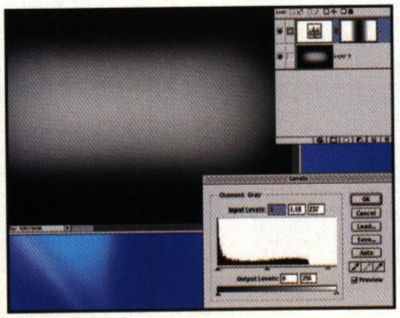
We now have to make the displacement map – a greyscale image that will be used to create the raised blisters in the pack…

A tighter fit

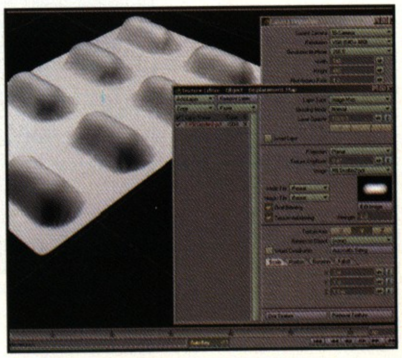
You need to adjust the blurred edges of the displacement map so they fall off sharply, creating a tighter fit for the pill inside. Use Colour Range to select the black area, set Fuzziness to Max and use another Levels layer to adjust the edge fall-off.



1 In *Photoshop*, create a new document roughly the size of one pill. Next, use the Rounded Rectangle tool to draw a pill shape. Set the round radius to a large value and fill the layer with white.



2 Flatten this and blur it. The blur will not make the right profile for the displacement, so you need to adjust it – use a Levels Adjustment layer with a gradient mask to brighten both ends of the capsule. This should prevent the ends rounding off too much, and it will make certain that the displacement is the right shape.



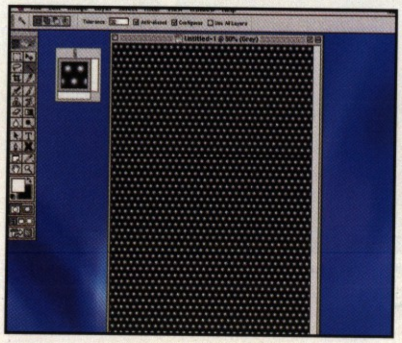
3 This is saved as a PICT and applied as a displacement map to the PillBlisterFront object. You'll need to repeat the texture over the object and adjust the intensity to get the right effect, but the result should be what you're after.

Part 3: Texturing the pack

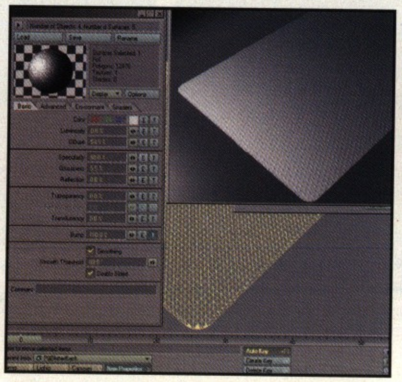
The headache pills are intricate in their detail, and you'll need a keen eye to recreate them. This is how it's done…

Masking layers

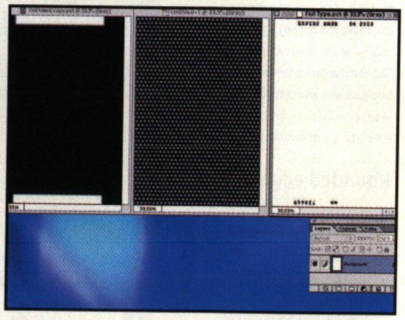
When you are working in *LightWave*, a mask layer is a layer that has its layer blending mode set to Alpha. This affects the layer below it in the stack.



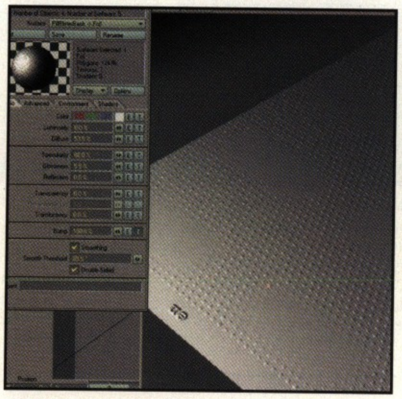
1 The PillBlisterBack object is made of aluminium foil. The model is simple but the texturing is complex, and there are numerous details you need to pick out. First, apply an array of circular bumps to its surface. This map can be created in *Photoshop*, as it's just staggered rows of blurred circles. In *LightWave* you can use the bump array procedural for the foil texture.



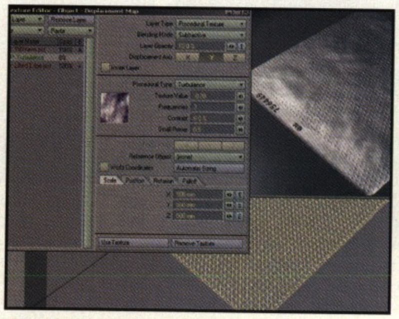
2 The base material of the foil is a neutral grey colour, with a low diffuse level and high specularity. The highlight is also diffused and wide, not sharp like the plastic. When it comes to your reference object there is some reflection, but the surface diffuses it considerably.



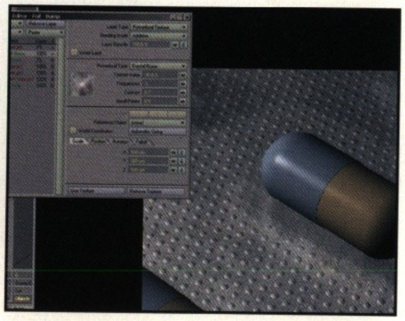
3 The bump is not uniform over the foil. The foil is smooth under the tablets and at two blocks at either end where the expiry date is stamped. These details can easily be created by masking out the bump array, and creating the text in *Photoshop*. All the maps you're creating are 800x1200 pixels, as seen here in *Photoshop*. They can be applied in planar projection and fitted to the object, since they are the same aspect ratio.



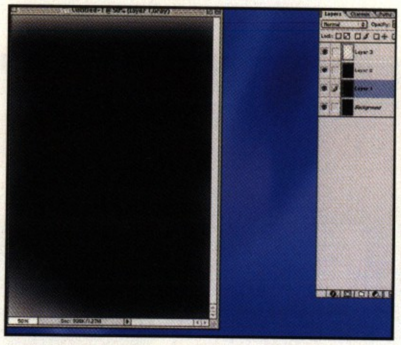
4 By copying the PillBlisterFront object's displacement texture – complete with its projection information – and applying it to the foil object as a bump mask, you can quickly mask out the bumps where the pills go.



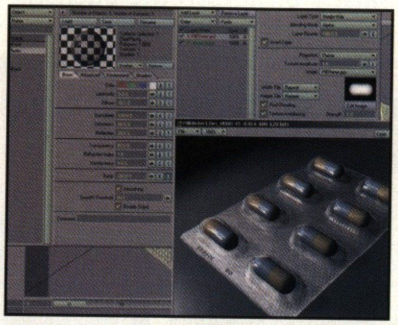
5 To quote a famous aphorism, God is in the details. All you need to do is recreate those details as you see them. You can apply the pill displacement texture as a mask to the foil's displacement, using a turbulence procedural (or some *Photoshop*-rendered clouds) as the displacement texture. This recreates the warping and creasing of the foil under the pills where it is not stuck to the plastic.



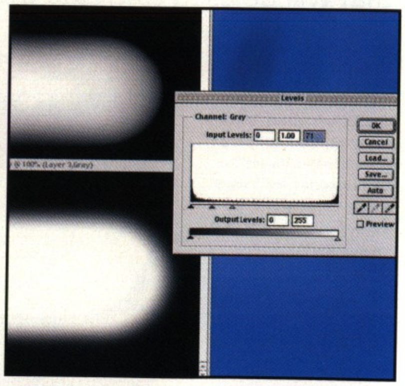
6 There are a few options with the reflection: either disable it, since the plastic will be reflective anyway; use an accurately diffused reflection effect at render time, which can be time-consuming; or apply a small amount of reflection but use a fine noise bump layer to disrupt it. The latter is best. We used a fractal noise bump layer with a low opacity and tiny scale. This provides a roughness that scatters the rays just enough.



7 The edges of the packaging should not be flat – they would curl up slightly as a result of being handled. This effect is easily created by using a further displacement map, simply a 800x1200 pixel image filled with black, with white where you want the edges to bend up. This will be applied to both parts of the pill pack, and you can even vary the amount so they come apart slightly.



8 The clear plastic is created easily. Transparency is set to about 90 per cent, and the colour to a mid-grey. The bumps in the foil would have been made while it was attached to the plastic, so they'd have distorted the plastic, too. Use an inverted copy of the bump array layer on the clear plastic texture, and since you only want the bump to appear where the foil and plastic touch, use the pill displacement texture once more as a mask.



Channel: Grey
Input Levels: 0 1.00 71
Output Levels: 0 255

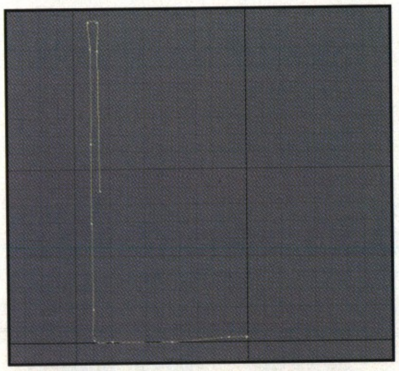
9 Unfortunately, that mask doesn't quite work, and there are bumps appearing on the blisters just as they are fading away. You can fix this by making a duplicate of this image in *Photoshop* and using Levels to widen the white area. With the new mask added, the encroaching bumps will disappear.

Part 4: Creating the mug

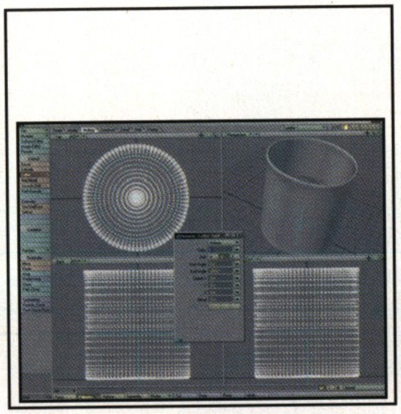
The mug is simple in structure, but it still takes a bit of effort to make it look natural...

Sculpting

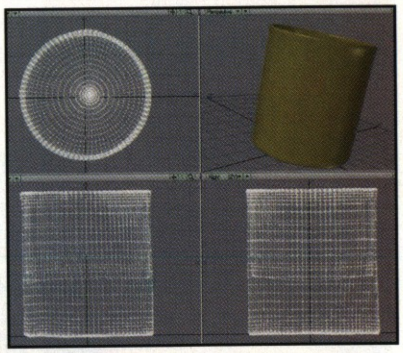
In *LightWave*, use the Dragnet tool to sculpt the distortion. Other programs will have a similar tool, such as Magnet, Proportional Modelling or Smooth Selection.



1 Although the objects are relatively simple in geometry, they are still complex in many ways. Plain objects can actually be more difficult to get looking photorealistic, because there are fewer visual hooks to convince the viewer. The mug is a prime example; as you would expect, it is created by lathing a curve.



2 The resolution of the object is kept high and set to 80 segments. Notice the detail created in the source curve: a slight bulge in the lip and at the base. Because you would never see the inside of the mug, the inner base is not modelled.



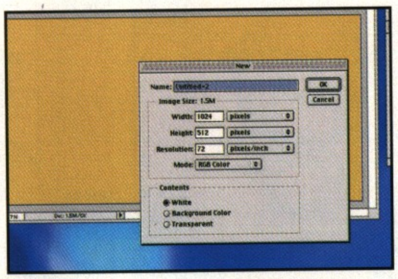
3 What you don't want is a perfect object. No mug is perfectly round and symmetrical, and a good way to roughen up an object without it looking too contrived is to distort it more than you want to, then try to mould it back into its original shape by hand. You'll never do it exactly, but you'll often get just the right organic look without the object looking too misshapen.

Part 5: Realistic textures

In a photorealistic image there is no such thing as a simple object. Here's how we created the detailed mug texture...

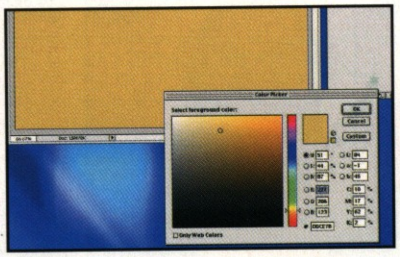
Fresnel effect

Most apps have a Fresnel shader, or some way to achieve this effect. In *LightWave* you can use either the Fast Fresnel shader or a black-white gradient in the Reflection channel, set to Incidence Angle mode.

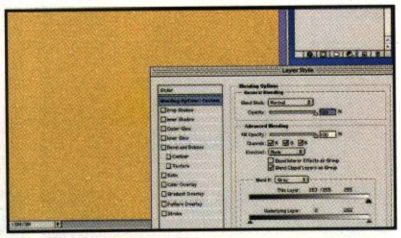


New
Name: Untitled-2
Image Size: 1.5M
Width: 1024 pixels
Height: 512 pixels
Resolution: 72 pixels/inch
Mode: RGB Color
Contents
● White
○ Background Color
○ Transparent

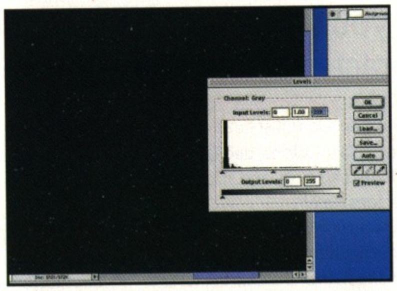
1 Texturing is important – you may think that on a plain mug there is not much to texture, but in reality there's plenty. The obvious thing to do is to give an object like this a pattern or decal, but that can look heavy-handed. Instead, create a simple two-tone glaze material. Begin in *Photoshop* with a 1024x512-pixel file.



2 Fill it with the base colour – we've gone for yellow. Note that it's easy to pick highly saturated colours when you want a yellow or red, and this often causes 3D images to look fake – many traditional ceramic glazes can't achieve such bright colours. The actual colour used, in HSB percentages, is: 51, 44, 87 (RGB: 221, 206, 123). That's a saturation value of 44 per cent; well under halfway.



3 The next thing to remember is that any real surface has slight variations in colour and tone, and they are never perfectly uniform. Add a little noise to the layer. The next step is to add some imperfections, such as bubbles in the glaze that cause tiny pits in the finish. Use another noise layer and use the Layer Styles dialog so that only the brightest pixels show through. A tiny bit of blurring can help, too.



Levels
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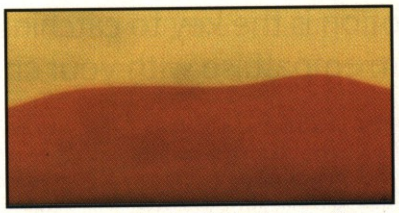
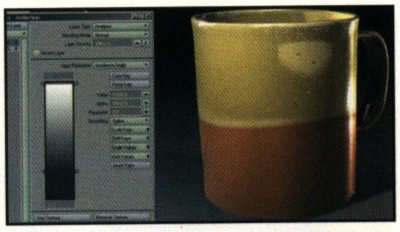
Output Levels: 0 255
☑ Preview

4 The blue channel is duplicated and copied to a new file. Use Levels to increase contrast, then it can be used as a bump map. It will match the white specks in the colour layer, looking like unglazed ceramic is showing through.

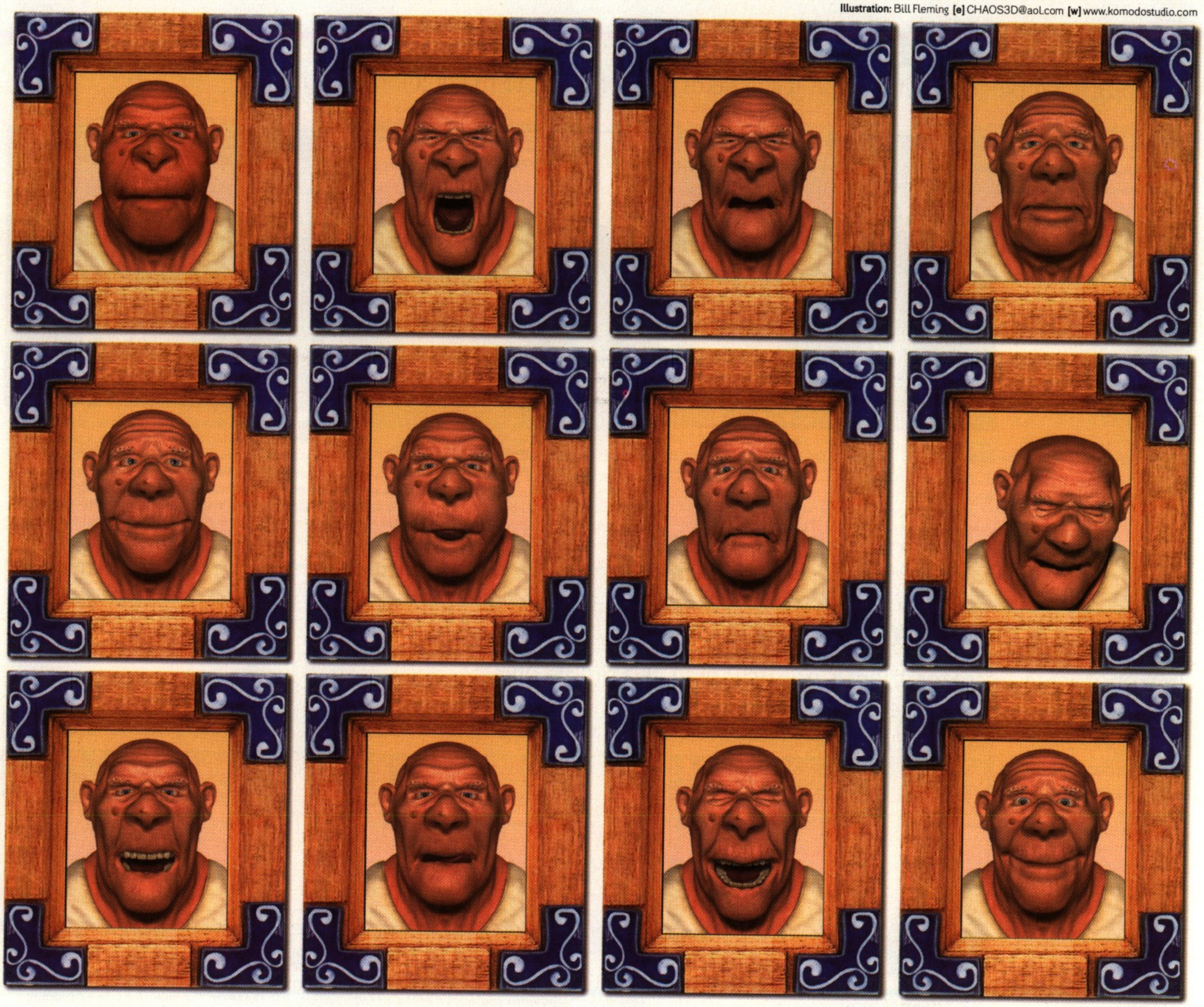


5 A second colour is added to the colour file. This is then distorted using the Wave filter, and the transition is softened using some blurring through a gradient mask to add variation. Finally, some extra details are added: discolouration and wear, dark at the bottom and light at the top. The three mug textures – MugColour.pict, MugBump.pict and MugSpecks.pict – plus the Mug.dxf object are all on your coverdisc.



6 Reflection is now added to the material. The Fresnel effect is vital, and should be applied in varying degrees to all reflective objects (except perfect, flat mirrors). This is because reflections are brighter on surfaces as they turn away from you; a uniformly reflective object looks fake. You can see how all those added details have come together to make a pretty realistic result. ca

Illustration: Bill Fleming **[e]** CHAOS3D@aol.com **[w]** www.komodostudio.com



Character Studio: Emotion

Emotion is the key to catching your audience's imagination and making them empathise with your characters. Chris Ollis explains how…

Most character animations serve a purpose – the hero runs in, shoots the bad guys, grabs the girl and runs off into the sunset. That's all well and good, and with some well-arranged run cycles, a few dodges and dives, the right lighting, some quality sound effects and some incidental music, the results can turn out to be very impressive. But to make it work really well, you need to be a bit more subtle. Don't just keep adding more and more explosions, decapitating more and more bad guys, and slapping in yet another lens flare!

Instead, what you want to do is show the danger in the hero's face. Make him wince from the pain of the searing laser bolt, see the damsel swoon with relief as she is swept up into his big strong arms and laugh as the bad guy gnashes his teeth in fury at his defeat.

Emotion can play an major part in making an animation great. It's the key to catching your audience's imagination and making them want to see more. *Toy Story* thrived on scenes with barely any movement, just simple facial expressions: whether they were for comic effect, despair or a show of love, they gave the film life. That's why so many people loved the film, and that's what you're going to learn to add now.

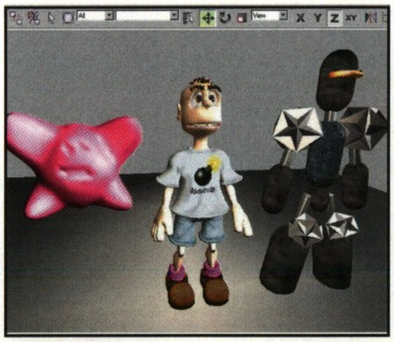
Expertise provided by Chris Ollis
[e] chris.ollis@vega.co.uk

Character Studio 3 is available price £1169 (upgrade £464) from Discreet.
[t] 020 7851 8000 [w] www.discreet.com
You can get hold of a *3ds max* demo (which includes *Character Studio 3*) from Discreet dealers (see the website for more details).

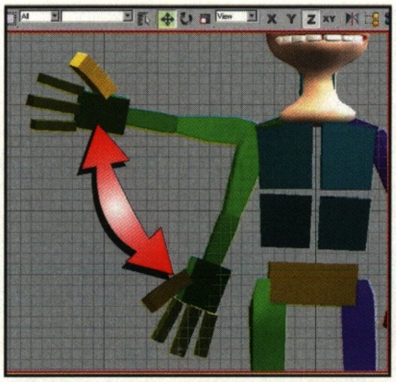
Files to accompany this tutorial are on your coverdisc in a folder called Tutorials\3D skills\Character studio

Part 1: Setting up

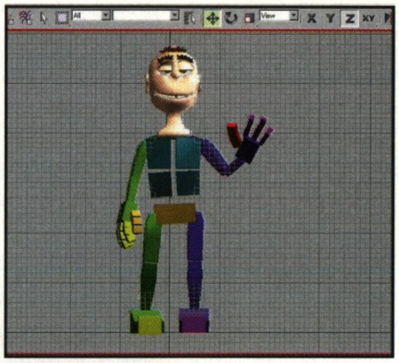
Morphing between pre-built facial expressions using *max 3d*'s Morpher Modifier



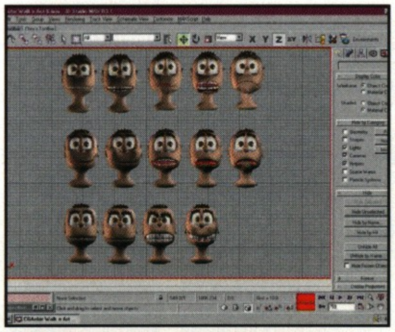
1 The way your character looks and behaves will influence the way you set it up. Depending on whether it's a human, a pink blob or a giant robot, you'll need to vary your use of bones, FFDs, simple kinematics or whatever. So think of what you are dealing with and how you are going to deal with it – there's nothing worse than getting halfway through your animation and realising that your links are wrong or holes are appearing!



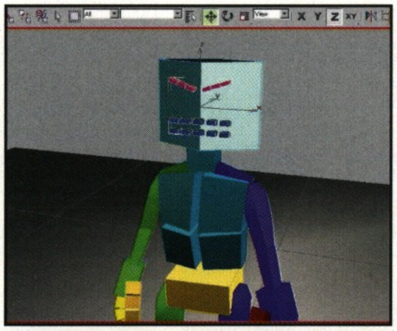
2 We'll assume that you are fairly competent at setting up a character for animation and that moving arms and legs, adjusting keyframes and general motion is within your grasp. If it isn't, don't worry, this tutorial might still help you along the way, or at least give you ideas to use in other areas of animation.



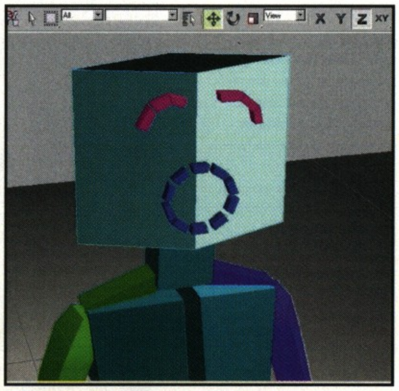
3 We'll be working with a simple cartoon character with a bone structured body and a series of pre-built facial expressions which we'll morph between using *max 3d*'s Morpher Modifier. If you have a similar model of your own, dig it out now, or better still, build one! Practice makes perfect. Any differences between models shouldn't affect the validity of this tutorial.



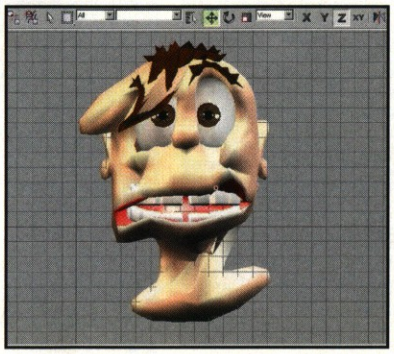
4 We will cover the basics of displaying happiness, sadness and anger, so we'll require a selection of faces to represent these. To get an idea of what you'll need, open the file 'faces.max' to see meshes or 'faces.jpg' to see a picture demonstrating the various stages. Alternatively, if you don't want to make your own, implement this head on to your character's body.



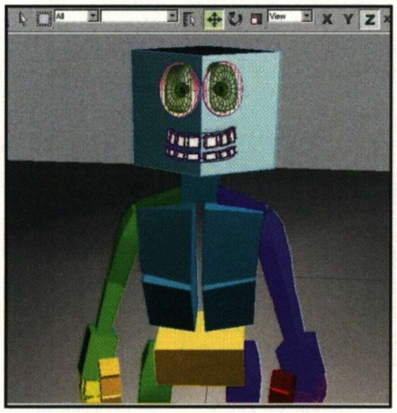
5 A morphing head isn't the only option available. Many animators use one out of habit, but also because they prefer the organic feel of the morph transition. If you would prefer, and are well versed in the art, build a bone structure for the face that can be incorporated into the body's skeleton. This way you can join the head to the body and not worry about sudden decapitation!



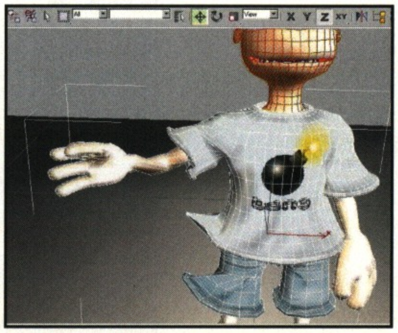
6 If you are using facial bones, make sure you have enough to create the shapes in the files mentioned above: a smile, a wide open mouth, raised eyebrows, 'O' shape of the mouth, cheek movement, eye opening and squinting.



7 If you are creating your own morphable head, we're sure that you are aware of the need to maintain identical pivot points, vertex counts and alignment between all of your targets. Failure to do so will result in the head not appearing in your Morpher Selection window or else it'll turn inside out when you try to make it smile!



8 For the eyes, eyelids and teeth, we'll use separate objects linked to the head to allow easier hands-on manipulation, for quick and easy blinks, eye movements or dental rearrangement.



9 Finally, before we get to the actual specifics, test your model. Bend his arms and legs, morph between expressions or move the facial bones. Try and do everything possible to make sure that it all works and isn't going to fall apart halfway through. Vertices linked to the wrong bones can be a nightmare to identify and fix, so if you have to do some fixing, get it done first.

Part 2: Happiness

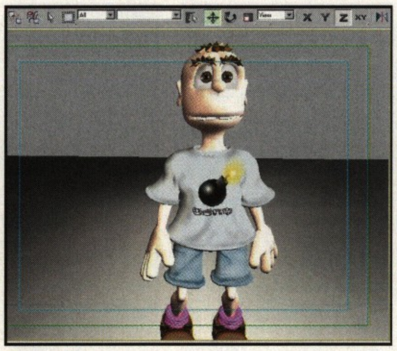
Surprise, a dawning realisation, the silly grin – they're all ways of expressing delight

Keyframe transitions

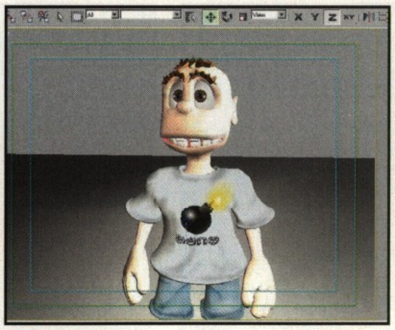
Be careful to keep an eye on transitions between keyframes, especially in the facial animations. If a bone or a morpher transition is first animated at frame 60, an initial keyframe will be generated at frame 0, creating a transition throughout the first 60 frames of the animation. This can seriously disrupt your character's intended expression. To fix such problems, spend some time in the Track view checking, pulling and pushing your keyframes about until they are where you want them to be.

Subliminal acting

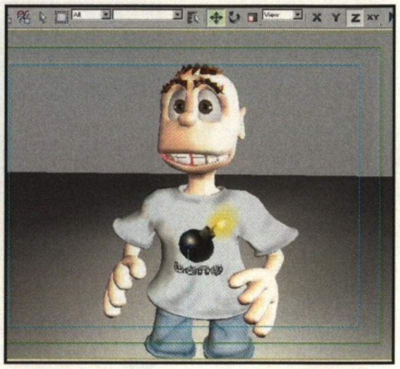
The transitions mentioned in the tutorial can look a bit stilted. Once you've finished animating, go back and add some subtle, random movement between the main keyframes – a 2 degree twist of the hips here, a slight lift in posture there, a tilt to the head and so on, to give a far more natural and fluid look to the movement. Keep the movements small, you don't want your character to start breakdancing halfway through an emotional appeal. Also be careful not to destroy the keyframes of animation that you've just spent all that time on!



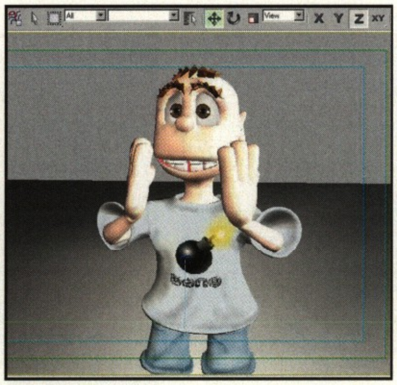
1 Starting from a base pose (arms by side, looking forward but relaxed) we will animate a character becoming more and more happy. We will run through facial and body movements that can be used in any 'happy' scenario although in this case we'll pretend that someone has walked in with a birthday cake!



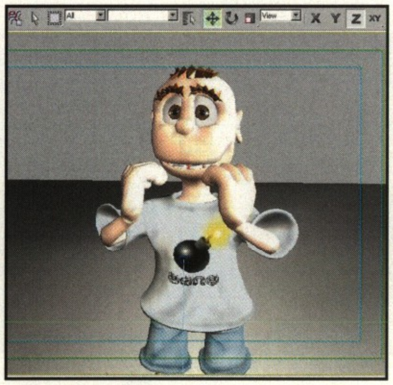
2 Jumping right in, go to frame 5 of the animation and using the morpher, or your facial bone structure, transform the character's face into a startled expression: raised eyebrows, eyes wide, mouth slightly open. The rapid transition (five frames running at 30fps) emphasises the shock involved. Also, raise the shoulders slightly – subtlety is the key here.



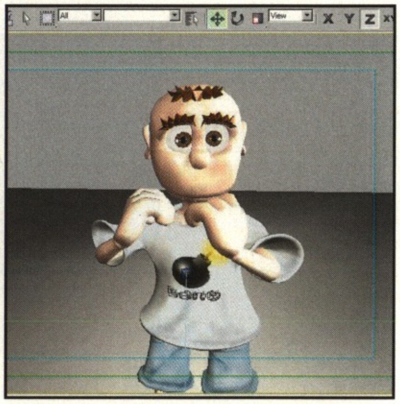
3 Frame 20. Move the hands up to just above waist height – this is a standard, subconscious, defensive movement. It adds subliminal action to the scene and keeps things moving nicely. It also underlines the speed of reaction with the body, catching up with the face's rapid response.



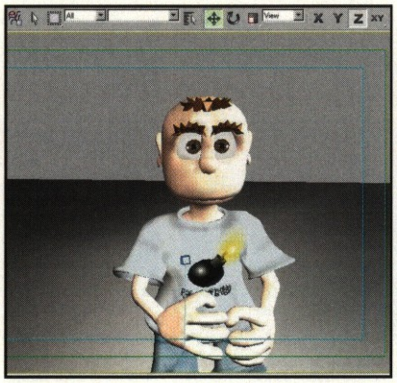
4 Frame 40. Move the hands up to either side of the face with the fingers outstretched. As this happens, increase the amount of smile in the morpher/bones to 50 per cent. The mouth should still be open from the initial shock, but showing definite signs of happiness.



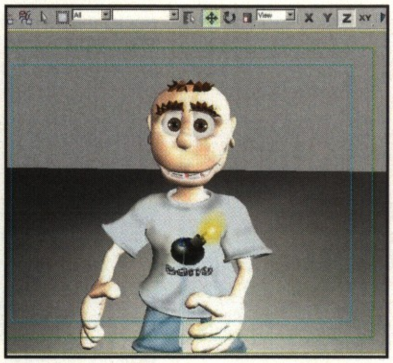
5 Frame 60. Drop the Shock value further and raise the smile. It should deform the cheek area a bit, adding lift and as a result, a 'smile' to the eyes. The character is now fully aware of the situation. Lower the hands to below chin level and loosely clench them.



6 Frame 80. Slightly embarrassed by the initial reaction, the character will become shy, and turn the head to look away a little. The mouth should be completely shut now with a full smile. Throw in a couple of blinks to add emphasis.



7 Staying with frame 80, drop the hands to the waist and roughly animate the fingers to create a sense of fumbling. Continue this fumbling for 20–30 frames. Our character is becoming caught up in the moment and subconscious reactions become necessary.



8 Frames 100–150. Overwhelmed with joy, the character now starts to swing from side to side, with the arms caught up in the motion. The head however stays focused and faces the target with far less deviation despite the full body movement. The facial expression should be a full-on, beaming, ear to ear smile.

9 Save and render. If you want to continue implementing it into a scene, bear in mind the character's emotional traits. A certain buoyancy or lift to the walk cycle, an ongoing clumsiness because its attentions are elsewhere and obviously a smile in the face of all adversity! An animation of the character running through these stages and more can be found on the cover CD.

Part 3: Sadness

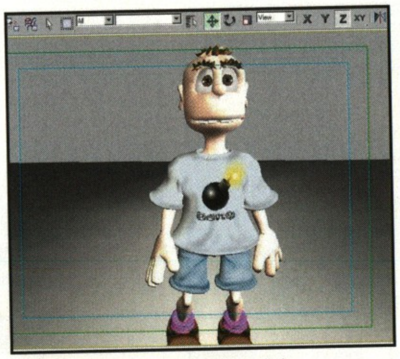
Slow gestures and a sense of timing are the keys to creating a sense of sorrow in your scene

Watery eyes

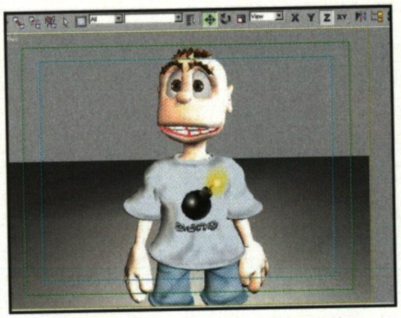
For that extra touch, increase the Shininess of the character's eyes (adjust the material's Properties) raising the value as they get closer and closer to crying.

Subliminal acting

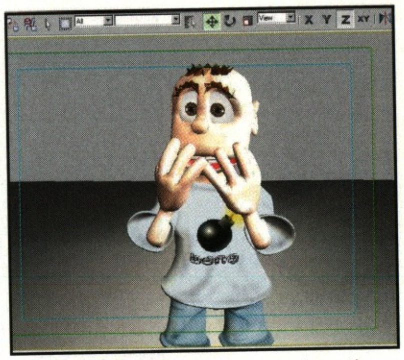
Once again, this is very important. To add realism to your characters, keep them moving – subtle gentle swings of the arms, a sway to the hips, a glance away, and so on. Implement them throughout your animation for brilliant results. But be careful not to overdo them and detract from your scene.



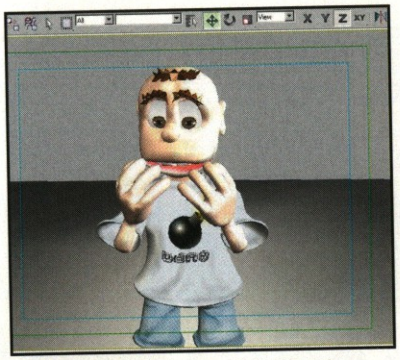
1 Go back to frame 0. Delete all the new keyframes because we are going to start again from scratch and create some characteristics for sorrow. Implementing these can add depth to your character and really make the audience emphasise with them.



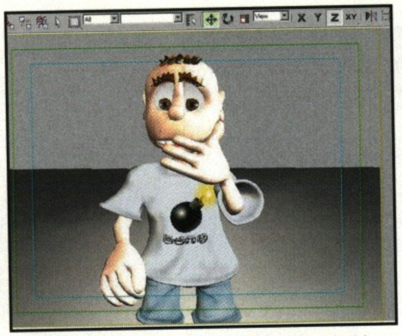
2 Once again, we will leap in and startle the poor chap. The sadness is derived from a sudden bit of bad news. So at frame 5, we want a morph to or facial bone animation of shock (raised eyebrows, open mouth). Add to this a raising of the head slightly as if your character is sitting bolt upright and paying attention to someone barging in with the news.



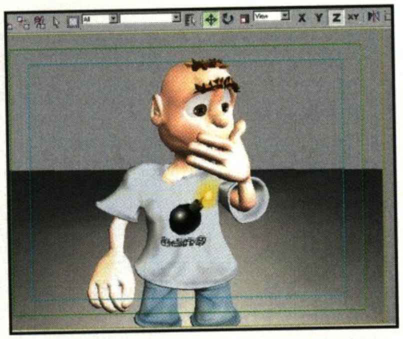
3 Frame 20. Again, the body reacts slower than the face so the 0–20 transition here will help maintain a visually natural movement. Raise the hands up again with outstretched fingers, but this time have them just cover the mouth up, almost as if the character is about to sneeze.



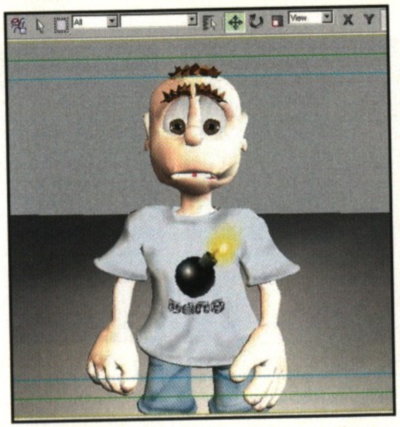
4 Frame 50. The fingers curl slightly and the hands drop to chin level as the head tilts downward. The eyes start to look downward as realisation kicks in. The 30 frame transition for the small movement helps emphasise the severity and sadness of the situation. The character is clearly stunned.



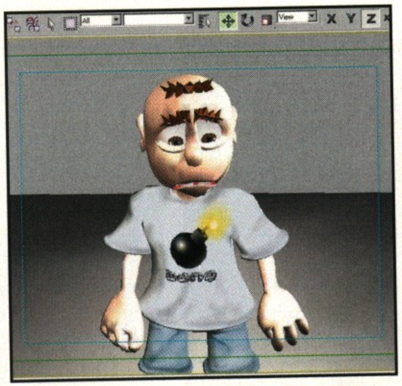
5 Frame 80. Raise the head back up to a level state, but now morph in or twist your bones to create a frown, raise and bring together the inside ends of the eyebrows (above the nose). One hand at this point should drop down to about waist level, while the other rises again to gently cover the mouth. For a subtle touch, raise the shoulders slightly to show a deep, controlled breath.



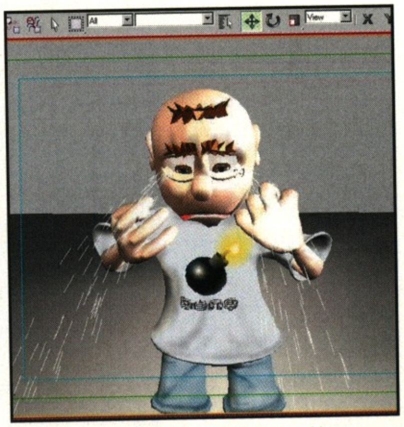
6 Frame 100–130. Close the mouth with a hint of downward curl at the edges. Turn the head to the side, taking care to keep the hand over the mouth all the time. Slowly close the eyes and keep them shut for a second before slowly opening them again. As the eyes shut, very gently shake the head side to side, but only by a couple of degrees.



7 Frame 150. Turn the head back to face the camera and drop the hand from the mouth. Here we reveal the complete morph/bone transition of the mouth to the sad, downward turned state. The frown should also be more intense with slight closure of the eyelids to create a squint.



8 Frame 170–200. Drop the head forward and start to shake the head from side to side, slowing to a gradual stop. At the same time, animate the chest, moving up and down as it breathes heavily. If you can manage it, put in a shudder – a deep breath followed by a slight shaking up and down as the chest lowers to the exhaled state.



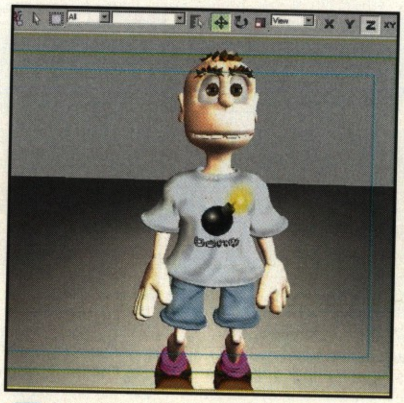
9 If you really want to go to town and have your character break down, why not have him throw his hands in the air, with his head back and mouth wide open, wailing. If you're feeling particularly cartoony, use Particle Systems to create tears flooding from his eyes!

Part 4: Anger

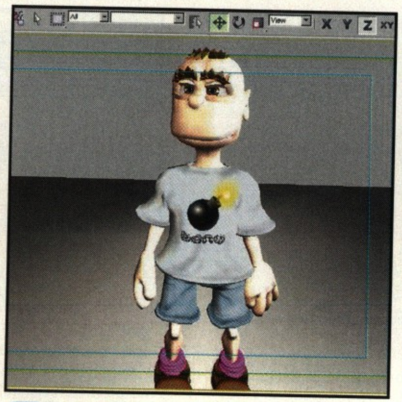
Create drama by conveying a barely contained feeling of rage in your character...

Keyframe loading

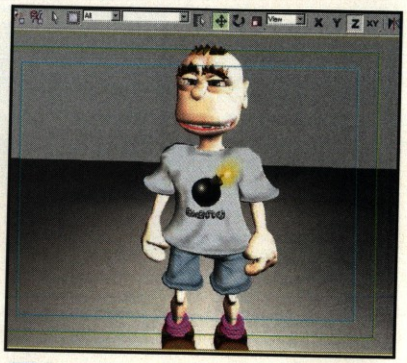
For repetitive motions such as breathing, swinging arms or blinking, open up the Track view and identify the areas. Select the keys involved, making sure you grab the start, middle and end of the transition. Now hold down Shift and drag the keys along the Track view to a new area – where you want an extra blink – and release the mouse button. So long as you are careful, you can happily grab multiple keys on multiple objects to loop several things at once.



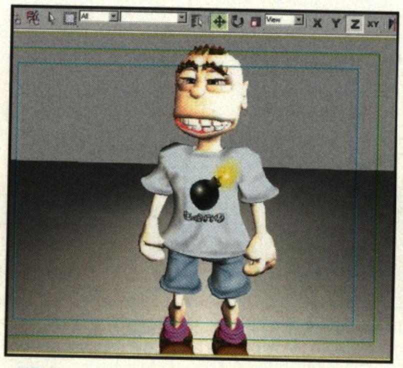
1 Once again, let's go back to the start frame, with the arms by the sides, and the face relaxed. This time, we'll annoy our character – perhaps someone will knock over a house of cards he's been building for the last four hours!



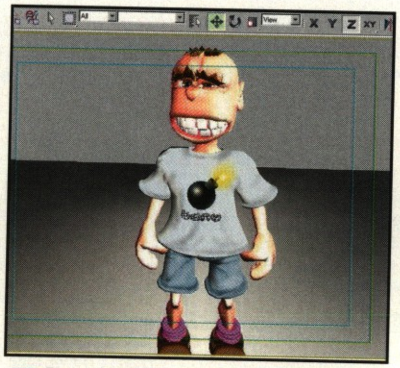
2 Frame 5. The head reacts to the sound of falling playing cards! Turn the head to face the source of the problem and morph in or move your bones to make him frown/scowl a little. Close the eyelids slightly to make him squint a bit.



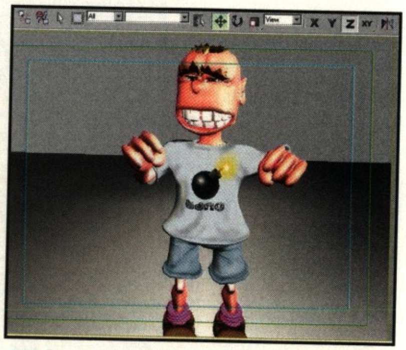
3 Frame 20. He's realised what's happened and it's well and truly caught his attention! Puff up the chest, raise the shoulders and clench those fists. Open the eyelids a little to give him scary, twitchy eyes! If you can, animate the arms so that they wobble slightly at his sides. This emphasises the tension in the arms.



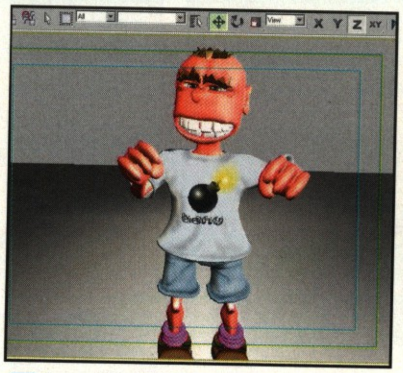
4 Frame 50. Breathing deep and hard now (chest up and down) raise and lower the shoulders in time with the chest movements and increase/decrease the tension of the clenched fists in synchronisation with the body movements. Again, twitch the eyelids a little, making sure the target is still receiving the scary look.



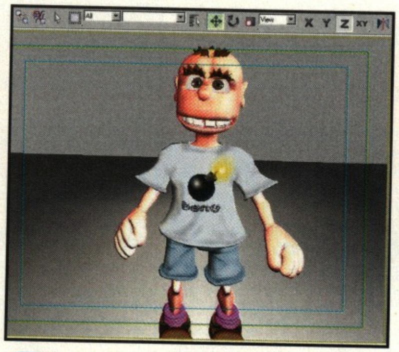
5 Frame 80–120. The final cards are hitting the table now, so we'll go to town a bit. Bulge the eyes slightly and animate the skin texture to show a flushing of blood to the cheeks/head! Keep the breathing, hand clenching and shoulder movements going. Track view and Shift-drag the keyframes you've already created to make a looping routine.



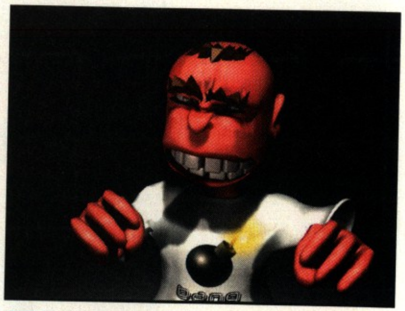
6 Frame 120–150. The vitriol is rising and so are his fists. Raise the clenched hands up to chest height and open the mouth slightly. Don't open it too far: just want it enough to show a glimpse of clenched teeth. Try and carry the shaking arms over to the whole body, so that he looks as though he's vibrating slightly. Make the viewer think he can't contain his rage.



7 Frame 150–180. Open the mouth a little more, and if you like, move the teeth a little from side to side, grinding them slightly. Keep the shaking going, until suddenly – and the speed of transition is the important bit – turn the head away, unclench and drop the hands to waist level, but maintain the heavy breathing chest movements.



8 Frame 180–200. Regaining control now, while looking away, shake the head from side to side, slowly decreasing the amount as you slowly turn the character to face forward once again. As he turns, make him blink once very slowly. In fact, keep his eyes shut for a few frames before opening. Keep the heavy breathing going (Shift-drag the keyframes).



9 To finish, decrease the amplitude in the breathing, calming the character down and removing the anger from the face. Render your animations and adjust the timing here and there to suit. Maybe add a couple of subliminal movements. The important thing to learn from this is the ability to act without much movement. At no point did the character run around, jump up and down or drive a burning car through a building. But the animations turned out as eyecatching, if not more so. ca

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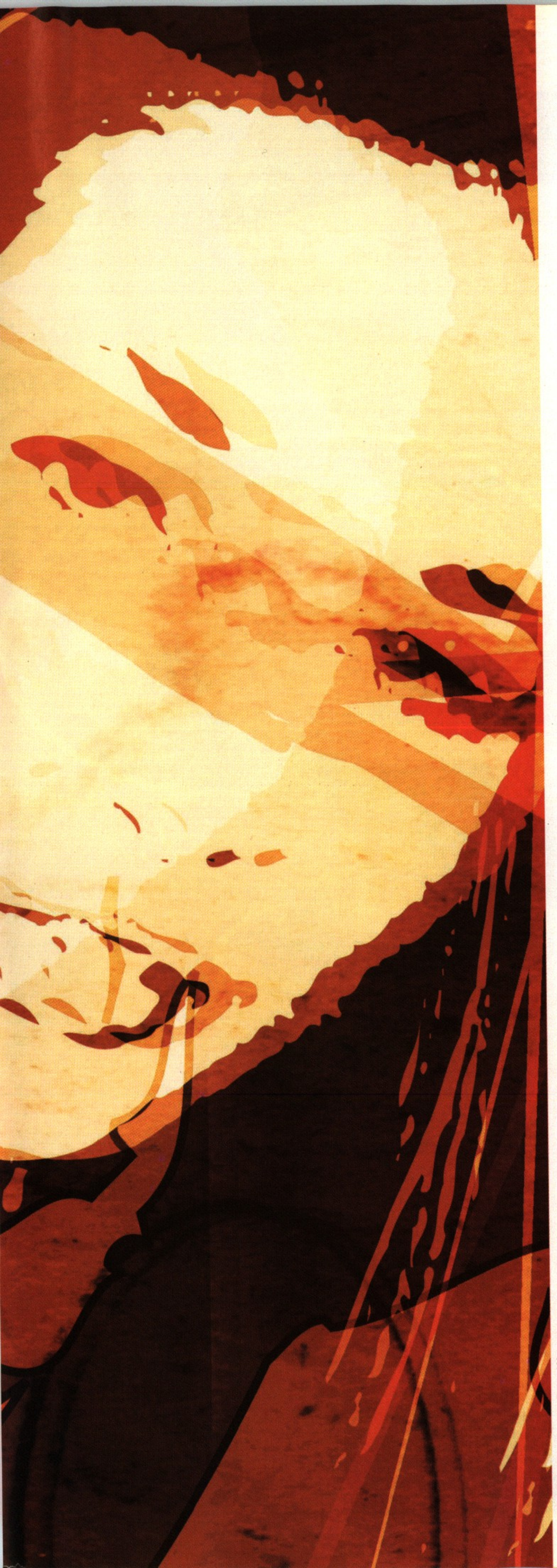

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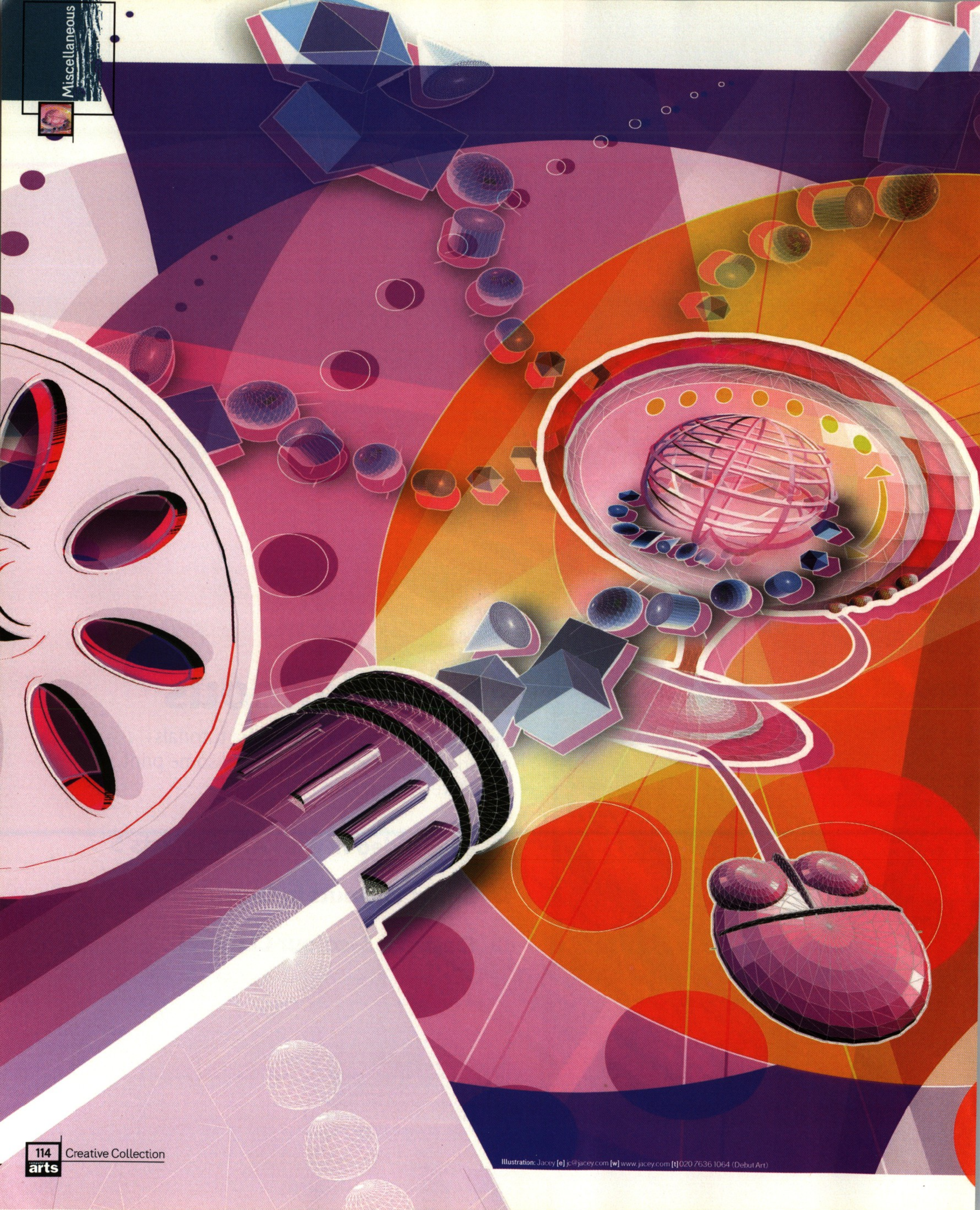
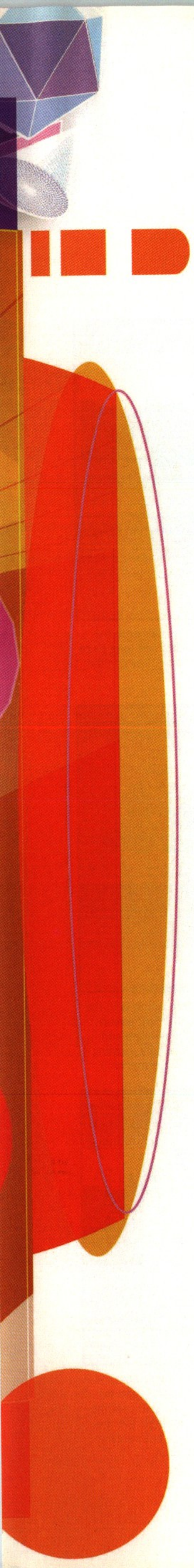


Illustration: Jacey [e] jc@jacey.com [w] www.jacey.com [t] 020 7636 1064 (Debut Art)



Web video effects

Web streaming is everywhere, and as bandwidth concerns decrease, the Internet will see more and more immersive content. Using our exclusive demo of *After Effects 5*, we show you how to be part of the Web video revolution…

After Effects has always been the staple product for video, TV and film animation. The latest incarnation has added the ability to export to the QuickTime streaming format, so you can make great-looking animations and distribute them over the Internet without needing to resort to *Premiere*, *Cleaner* or other streaming packages. *AE5* has not just added Web streaming functionality, it has also addressed criticism of its purely 2D bias and added innovative 3D compositing features, including fully keyframeable lights and cameras which have previously only been available to users of much more costly packages.

This tutorial will show you how to use some of these features in the creation of a stunning promotional DV video for incorporation to a Website as a *QuickTime* streamed file, plus how to export part of the footage to create a mini sting for the front of a site with the brand new SWF export features.

Demo and tutorial files

You'll find a save-disabled demo of *After Effects 5* on your CD, along with all the tutorial files you require in Tutorials\Miscellaneous\After Effects.
Expertise supplied by Mark Towse
[w] www.bigimpact.tv [e] mark@ bigimpact.tv

Digital video online

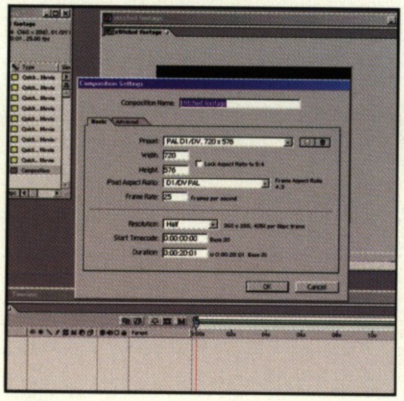
Install the demo of *After Effects 5* from your cover CD, then start the process of adding dynamic video content to a site by going to Composition>New composition…

SWF export

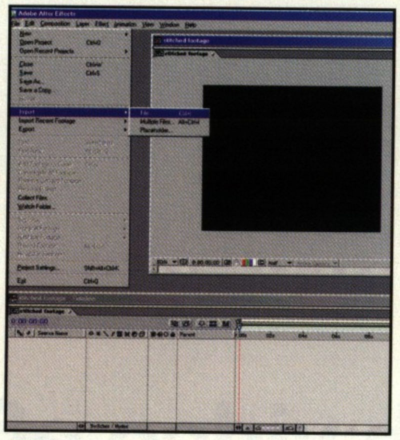
Despite the SWF export being a great feature, file sizes can end up quite large and not everything in a composition can be exported without rasterising. Items fading, scaling and moving are no problem, but lens flares and so on lead to SWF files being virtually unusable, so use sparingly and only when you can't perform a desired function in *Flash*.

Timeline markers

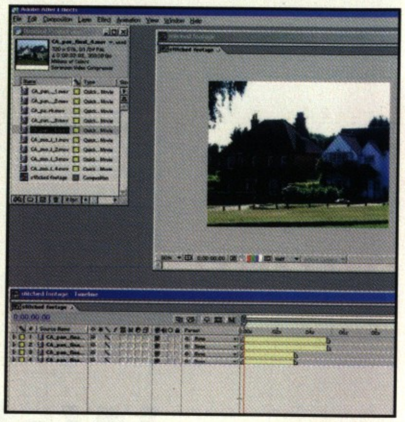
You can add markers to a timeline to perform HTML actions when certain points of the streamed media are reached, which results in more interactive experiences for users on faster connection speeds. *Premiere 6* also has this ability. This feature will be mainly used for calling up Web pages in framesets or new windows, and could be used to display useful resources.



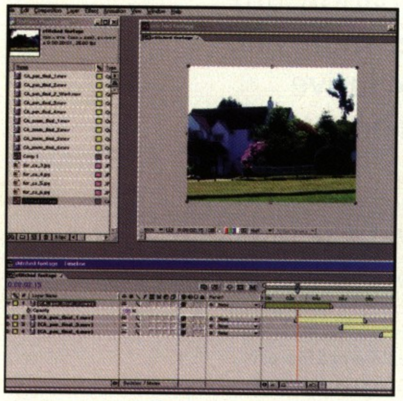
1 After you have set up a new composition, set the frame rate to 25 and the resolution at 720 by 576; UK pal. If you are reading outside the UK, use your local DV setting. Set the composition to 12.01 in length.



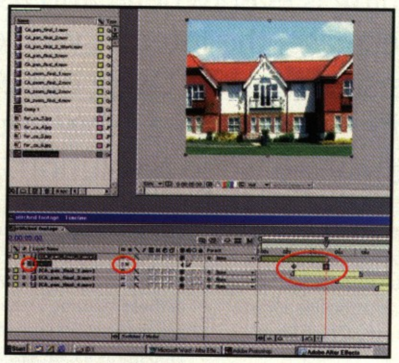
2 Next you need to import the eight pieces of compressed QuickTime architectural footage included on your cover CD – four 'pan', four 'zoom'.



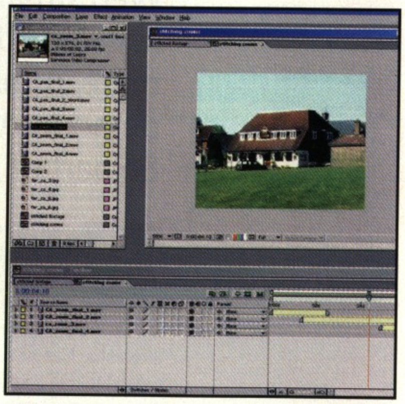
3 Drag the four 'pan' QuickTime files onto the timeline. We are going to create one long piece of video from the pan shots by fading between the four different layers.



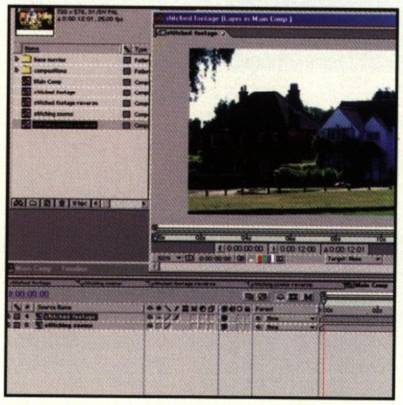
4 Drag the video layers so that one overlaps the other – this will extend the pan to about 10 seconds. Select the first video layer and press T to open the opacity twirly. In *AE5* all standard keyboard shortcuts have remained the same.



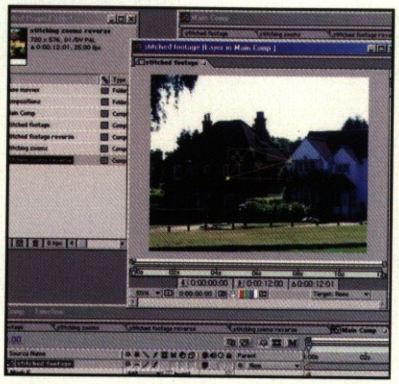
5 Make a keyframe by clicking the miniature stopwatch on the twirly where the second footage layer starts. Add another keyframe at the end of the first footage layer and set the opacity to zero. You can drag the timeline marker to view the footages fading into each other. Perform this operation for the other video layers.



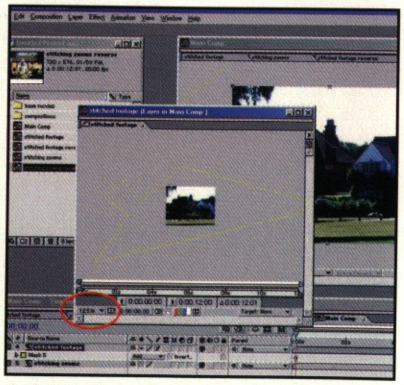
6 Now create another new composition with the same settings, this time drag the four 'zoom' architectural footage shots onto the timeline and follow the same steps as for the pan shots, naming the composition 'Stitched Zooms' for reference.



7 Create a new composition, 24 seconds long, and name it 'Main Comp'. Drag the Stitched Footage comp and the Stitched Zooms comp to the timeline, double-click on the top piece of footage in the viewing window to open the mask pop-up.



8 Either use the Pen tool to draw the Whirlybird Roof logo, or copy and paste from the file whirlybird_logo.psd on your cover CD. You will see a yellow mask appear in the window. Now press CTRL+T or Command+T to activate the mask transformation grid.



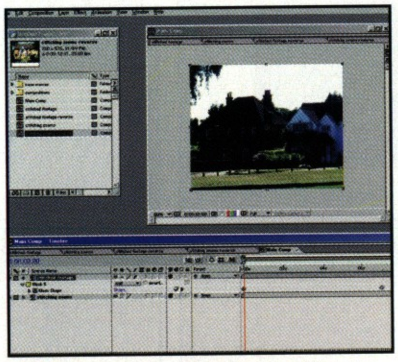
9 Now change the size of the viewable area down to 12.5 per cent and drag the bottom-left corner of the mask transformation grid until the roof logo completely overlaps the footage. We are going to animate the mask so parts of both video layers will be viewable at the same time.

Going 3D

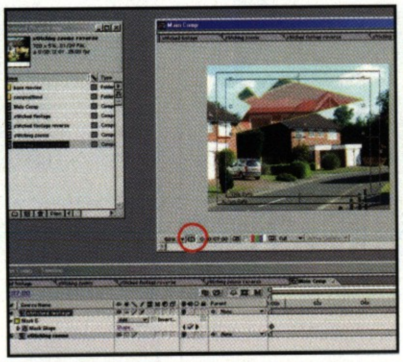
The new 3D compositing features operate in a similar way to higher-end packages like *Commotion* and *combustion*. Rather than working solely on 2D, *After Effects 5* becomes in effect a small 3D application.

Parenting

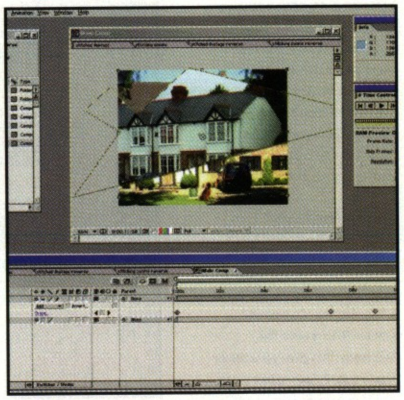
AE5 enables you to create parent and children objects, which can significantly reduce the necessity to make multiple keyframes for objects that need to move in a similar way. Repetitive work sequences can be avoided completely if you think about how to create your goal before embarkation.



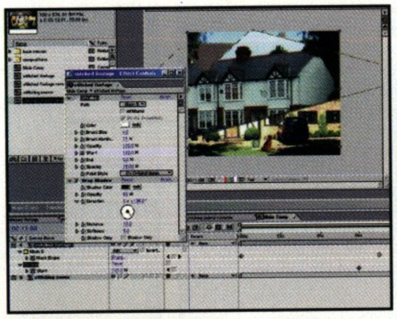
10 Close the mask window, and you will see the edge of the mask in the main view window. Press M and you will see the mask twirly appear in the timeline window. Twirl it down and create a mask shape keyframe at 00:00 by clicking the miniature stopwatch. Create another at 7, 9, 11 and 12 seconds.



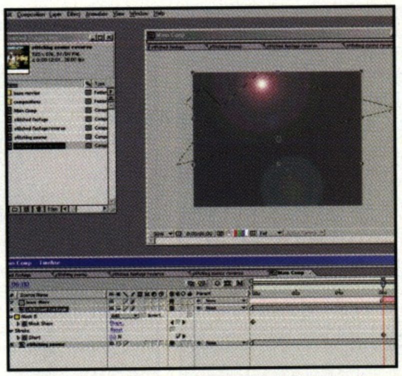
11 Select the 7-second keyframe, shrink the viewable area to 12.5 again (it was only in the mask window before). Click on the mask and drag the bounding box corner until the mask shrinks within the action-safe region of the screen. You can check this by clicking the Action-Safe switch, circled. Change the viewable region back to 50 per cent.



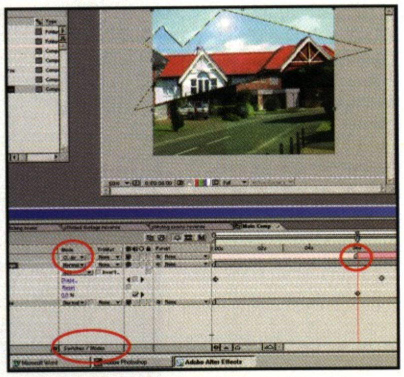
12 Go to the keyframe at 11 seconds and expand the mask size out to the right, like in the screenshot. At the 12-second keyframe, move the mask completely to the left of the footage so we get a 'swoosh' effect of videos passing over each other.



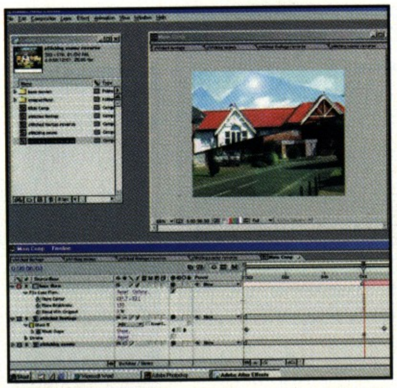
13 On the same video layer go to Effects> Perspective>Dropshadow, then change the shadow size to 10 and the softness to 5. Go to Effect>Render>Stroke. Set the brush size to 4 and select the mask we created from the dropdown menu. The other defaults are fine. Create a keyframe for the stroke start option at 6 seconds and 8 seconds. Now press U to hide everything on the layer that doesn't have a keyframe.



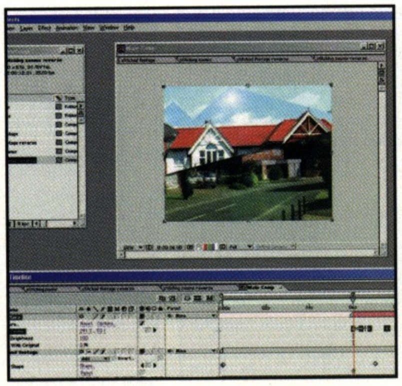
14 Set the keyframe at 6 seconds to 0 per cent. Between 6 and 8 seconds you will now have a white line tracing around the edge of our mask. We just need to add a little sparkle. Go to Layer>New> Solid and then go to Effects>Render>Lens Flare. Name the layer 'Lens Flare'.



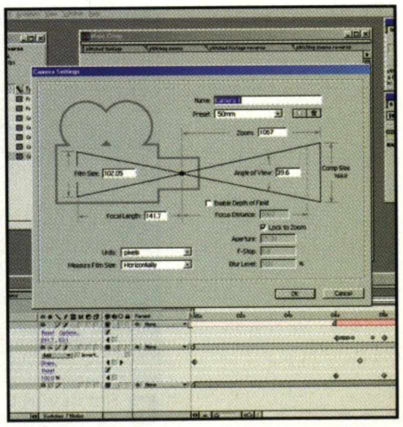
15 Click on the Switches/Modes button at the bottom of the timeline. On the layer named Lens Flare click on the small button labelled Normal and select the Overlay blending mode from the list. Drag the left constraint on the timeline to 6 seconds. Re-click the Switches/Modes button.



16 On the video layer with the mask, double-click on the mask in the timeline to open the mask window. Click on the mask and press CTRL+C or Command+C to copy. Close the mask window. Click on the Lens Flare layer and press E to show all effects on the layer. Twirl the menu open.



17 Click on Flare Centre and press CTRL+V or Command+V to paste the mask onto the layer. The mask now acts as a path for the Lens Flares centre point, so on screen we see a lens flare tracing the edge of a logo and leaving a white border – this is a really nice effect.



18 Now we will use the new 3D features of *After Effects 5*. Click Layer>New>Camera. Keep all of the default settings. Click OK and then OK again on the warning that will appear.

Digital video online continued...

Streaming

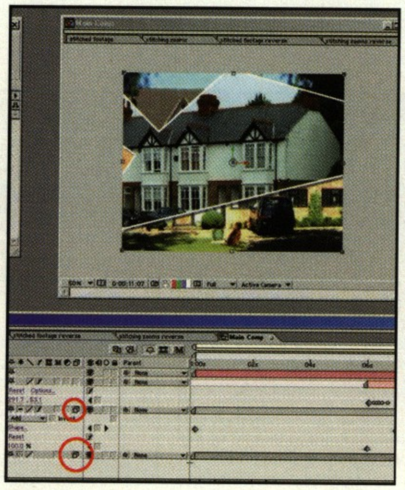
Despite having the great QuickTime streaming export option, it is *After Effects 5*'s twin DV product *Premiere 6* that has integrated *Cleaner*. This has more options for streaming, and enables specific targeting of connection speeds among its options. The best streaming results can be created from pairing the two products.

Extra footage

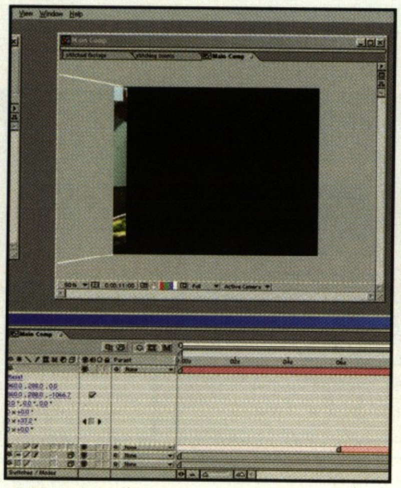
You can nest the compositions Stitched Pan and Stitched Zoom in blank compositions, and press CTRL-Alt-R (or Command-Option-R) to reverse the sequence. This gives you another two lots of 12-second footage to use as you see fit – you could extend the video and animate basic or path text over the top of the text with company products.

Catching a bug

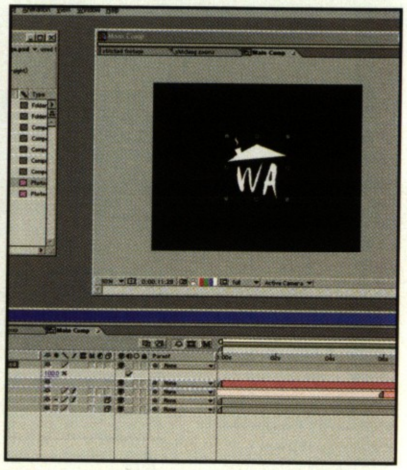
If you have *Premiere 6* installed on your computer, a small bug in *AE5* will show *Cleaner* as an export option. However, you can't use *Cleaner* as you would in *Premiere* – use the QuickTime export for streaming and other low-bandwidth publishing needs.



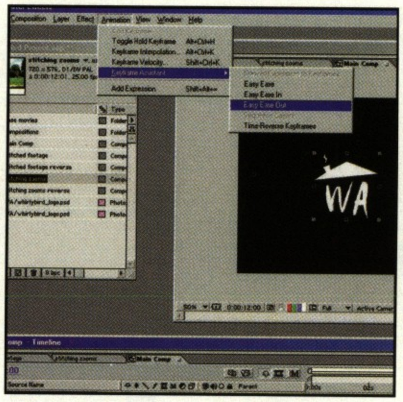
19 On the two video layers, click on the small 3D box circled in the screenshot. This now enables the camera to affect the video layers – you will see a red and green axis appear in the centre of the viewing window.



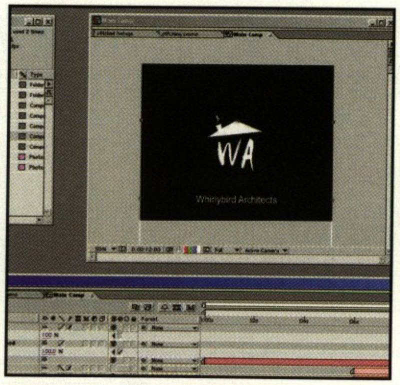
20 Twirl down the camera transformation options and insert keyframes on Y rotation at 10:15 and 11:20. Insert a value of 50 degrees on the 11:20 keyframe. You will see the video layers folding out to the left.



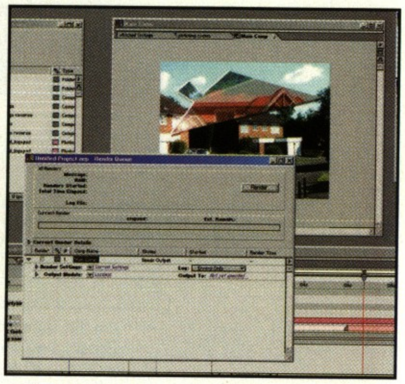
21 Import the file Whirlybird_logo.psd from the cover CD. Only import the Whirlybird logo layer when given the option. Position the time bar at 11:00 and drag the Whirlybird logo onto the screen. Press S to access the scale twirly. Create two keyframes, one at 11:00 and one at 12:00.



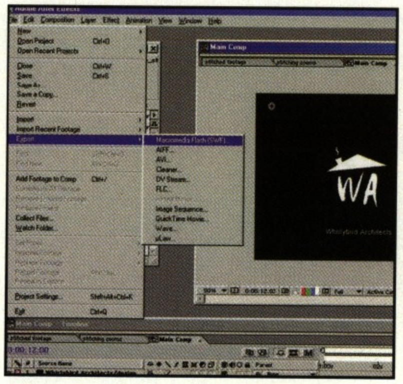
22 Set the 11:00 keyframe to 0 scale. Shift-click the12:00 keyframe and go to Animation>Keyframe assistant>Easy Ease Out. This will give the same effect as the camera shooting forward, but takes a lot less work.



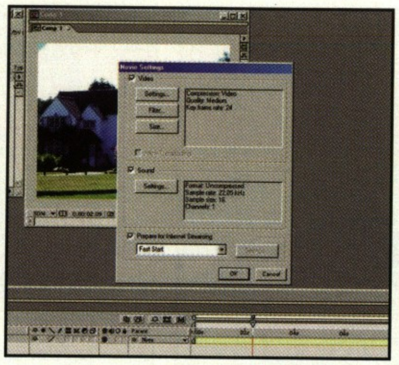
23 Go to Layer>New>Solid, apply the effect Basic Text, type in the company name 'Whirlybird Architects' then make the text white and 36 points. Position the layer below the logo and press T to access the opacity twirly. Create two keyframes at 11:00 and 12:00, set opacity to 0 at 11:00.



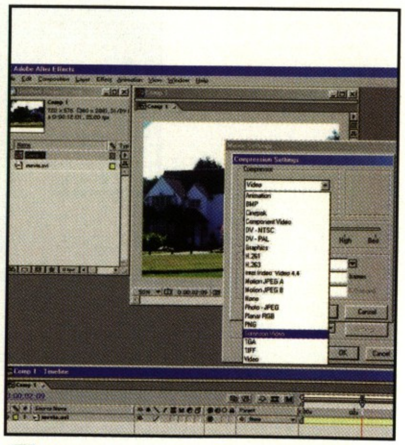
24 Click Composition>Add To Render Queue and perform an uncompressed render – be sure to specify an output format. We are rendering this, as it is faster to use the inbuilt *Cleaner* on a single piece of movie rather than on an unrendered movie made up of a number of compositions.



25 First we want to create our video sting for the front of a Website. Drag the active segment bar on the timeline to 11 seconds. Click File>Export>Macromedia SWF. Keep all the standard settings and you will have a mini-sting of the logo zooming in and the text fading up.



26 In a new project, import the render we just created and drag to the timeline. Go to File>Export>QuickTime. Specify a filename and you will then get this dialog box. From Video Settings select the Sorenson codec. Turn off the Music Settings as we have no audio for this clip. Use Fast Start, click OK and your stream will be prepared.



27 You now have a compressed DV stream that is suitable for distribution over the Internet – it's as simple as that. ca

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Smart cut-outs and runarounds

QuarkXPress can use clipping paths and Alpha channels embedded within images to produce some unexpectedly versatile, visual effects…

Cut-out images should be compulsory: they break the monotony of squared-up crops, and their irregular outlines are more pleasing than cheesy-looking symmetrical shapes. There are several ways of preparing an image cut-out. One is to get your output bureau to do it for you. Another is to trace the cut-out shape in *Photoshop*, embed it as a named clipping path and save the image as an EPS or TIFF. Another is to paint over the background areas in a *Photoshop* layer, embed this as an Alpha channel, and save it as a TIFF. *XPress 4.1* will use it as the cut-out outline.

However, this just scratches the surface of what can be done with paths and channels in *XPress*. Even the program's automatic clipping facility, usually derided for its imprecision, can be put to good use. It's all to do with the division between clippings and runarounds, as you'll find out.

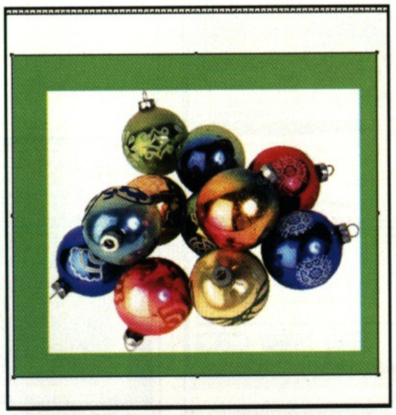
The files for this tutorial are on the coverdisc in the folder called Tutorials\Miscellaneous\Smart cutouts and runarounds. You also find a PC/Mac demo of *QuarkXPress 4.1* in the Applications area. Expertise provided by Alistair Dabbs [t] 020 8464 4686 [e] ali@dabbsnet.com

Part 1: Make a matte for runarounds

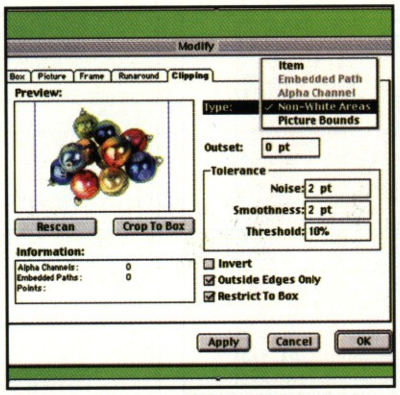
Put *QuarkXPress 4.1*'s ability to automatically generate clipping paths to good use as versatile text runaround guides instead of clumsy image cut-outs

Wot no Alphas?

It's all a con: *QuarkXPress* doesn't actually support Alpha channels. In order to do so, it would have to support transparency. What it does, though, is recognise clear edges in an image's Alpha channel mask and convert them to a clipping path on the page. For this reason, the clipping may not always be a pixel-perfect match to the original outline. Thankfully *XPress* lets you adjust this path afterwards.

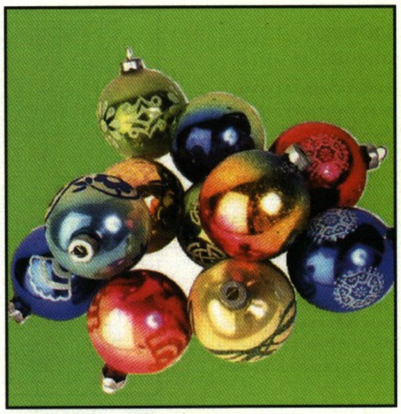


1 Draw a picture box on an *XPress* page and put an image in it by typing Ctrl-E (Windows) or Command-E (Mac) and selecting a bitmap picture file. Choose an image with a flat colour background, it doesn't need to be white, and colour the box background differently such as the green here.

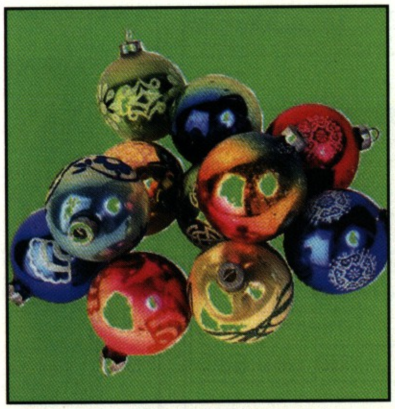

Modify
Box
Picture
Frame
Runaround
Clipping
Preview:
Item
Embedded Path
Alpha Channel
✓ Non-White Areas
Picture Bounds
Rescan
Crop To Box
Apply
Cancel
OK

Type: Non-White Areas
Outset: 0 pt
Tolerance
Noise: 2 pt
Smoothness: 2 pt
Threshold: 10%
Information:
Alpha Channels: 0
Embedded Paths: 0
Points:
☐ Invert
☑ Outside Edges Only
☑ Restrict To Box

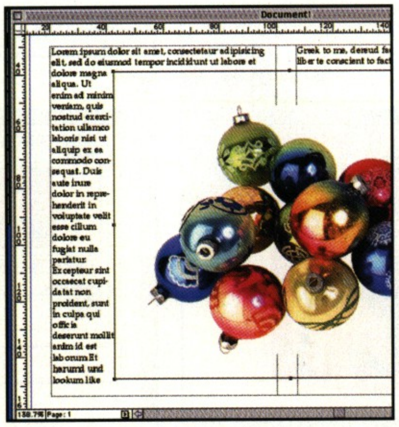
2 Type Ctrl-Alt-T (Windows) or Command-Option-T (Mac) to open the Modify dialog window with the Clipping tab selected. Click on the pop-up list next to Type and change it from Item to Non-White Areas. This forces *XPress* to generate its own clipping path based on what it thinks can be clipped out as the background.



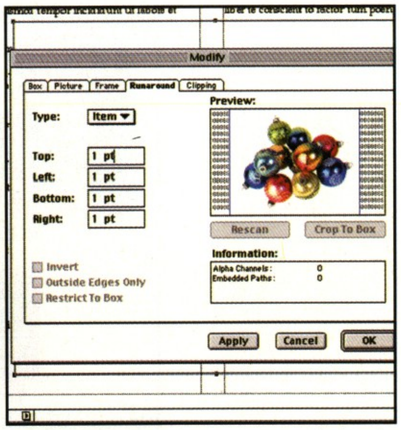
3 Click OK to view the result properly. If the background in your image is not white, you can go back and increase the Tolerance Threshold percentage. You can see the limitations of this feature already: the clipping path is imprecise and leaves gaps inside the picture area.



4 Go back into the Modify Clipping dialog window (step 2) and remove the tick from the Outside Edges Only option. Click OK to see the result. Oh dear, *XPress* really isn't doing a very good job of this – it has clipped areas it shouldn't have. The way round this is to use *Photoshop*, not *XPress*, for cut-outs.

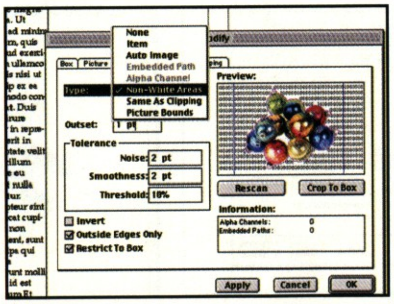


5 Now let's try a different tack. This image already has a white background and is being used on a white page, so does it need to be a cut-out? Reset the clipping Type to Item, set the picture box Fill colour to None, then create and fill a text box and send it behind the picture.


Modify
Box
Picture
Frame
Runaround
Clipping
Preview:
Rescan
Crop To Box
Apply
Cancel
OK

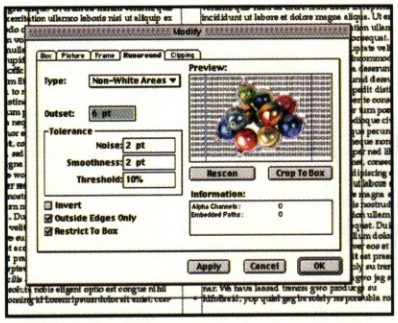
Type: Item
Top: 1 pt
Left: 1 pt
Bottom: 1 pt
Right: 1 pt
☐ Invert
☐ Outside Edges Only
☐ Restrict To Box
Information:
Alpha Channels: 0
Embedded Paths: 0

6 Press Ctrl-T (Windows) or Command-T (Mac) to open the Modify Runaround dialog window. This confirms what you already know: this picture has no embedded paths or Alpha channels and is forcing the text behind it to run around the rectangular boundary of the entire image.


None
Item
Auto Image
Embedded Path
Alpha Channel
✓ Non-White Areas
Same As Clipping
Picture Bounds
Preview:
Rescan
Crop To Box
Apply
Cancel
OK

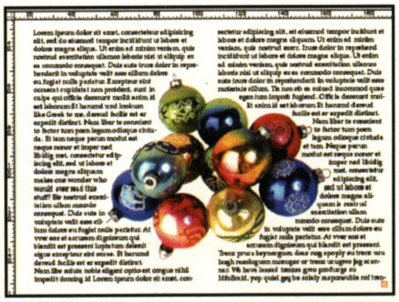
Type: Non-White Areas
Outset: 1 pt
Tolerance
Noise: 2 pt
Smoothness: 2 pt
Threshold: 10%
☐ Invert
☑ Outside Edges Only
☑ Restrict To Box
Information:
Alpha Channels: 0
Embedded Paths: 0

7 Click on the pop-up menu next to Type and change it from Item to Non-White Areas, just as you did earlier in the Clipping tab. *XPress* generates the same clipping path as before, but this time doesn't attempt to use it as a cut-out. Instead, it's purely a runaround guide for the text.


Modify
Box
Picture
Frame
Runaround
Clipping
Preview:
Rescan
Crop To Box
Apply
Cancel
OK

Type: Non-White Areas
Outset: 6 pt
Tolerance
Noise: 2 pt
Smoothness: 2 pt
Threshold: 10%
☐ Invert
☑ Outside Edges Only
☑ Restrict To Box
Information:
Alpha Channels: 0
Embedded Paths: 0

8 Just for good measure, increase the Outset value from its default 1pt to a more sensible measurement such as 6pt or more. This pushes the text away from the edge of the invisible clipping path to give a more attractive and legible result.



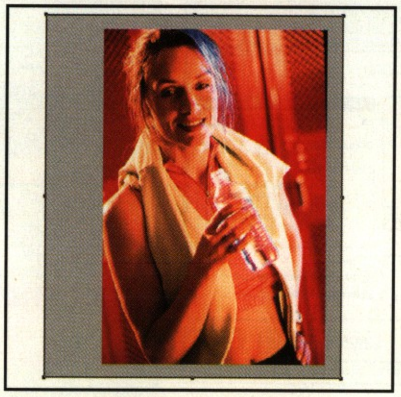
9 Click OK, then click on the page to deselect the picture box, and tap the F7 function key to toggle off the page guides. Finally remind yourself that your image isn't a cut-out, even if it looks like one: it's a flat image with an automatically generated *XPress* runaround matte.

Part 2: Free pictures from their boxes

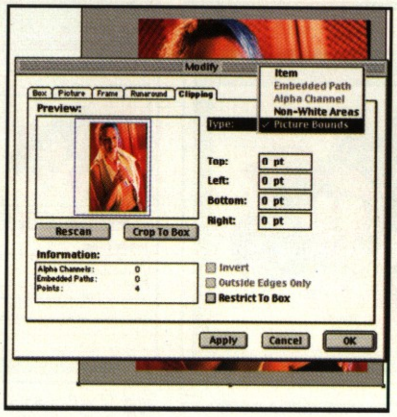
You can edit pictures and picture boxes independently and even separate the two. Great, but what's the point? Read on for some fresh ideas

InDesign alternative

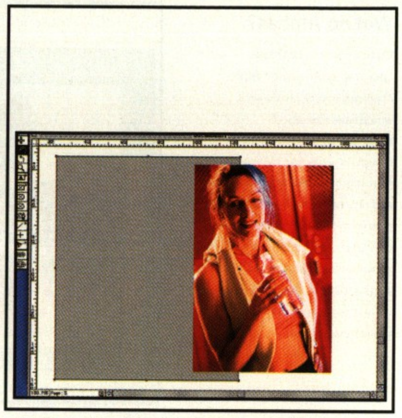
Adobe *InDesign 1.5* can 'see' embedded clipping paths and Alpha channels in placed images, just like *QuarkXPress*. It can also generate its own cut-outs in a similar way to *XPress*, but with rather more success. However, all this will improve significantly with *InDesign 2.0*'s transparency support, enabling you to apply custom anti-aliased edges to those alpha masks. As a result, the use of clipping paths will become pretty much redundant.



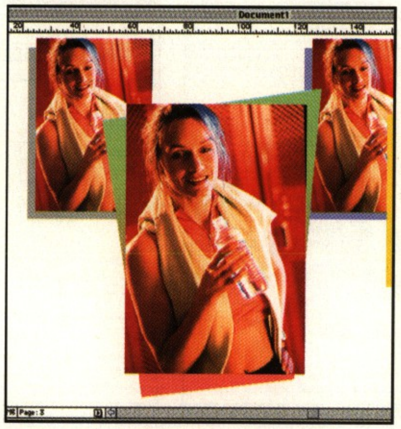
1 Draw a picture box on an *XPress* page and put an image in it by typing Ctrl-E (Windows) or Command-E (Mac) and selecting a bitmap picture file. Select a conventional rectangular image, not a cut-out. Give the picture box a background colour (we've used 30 per cent black) to show where the image boundary ends.


Modify
Box
Picture
Frame
Runaround
Clipping
Preview:
Type:
Item
Embedded Path
Alpha Channel
Non-White Areas
✓ Picture Bounds
Top: 0 pt
Left: 0 pt
Bottom: 0 pt
Right: 0 pt
Rescan
Crop To Box
Information:
Alpha Channels: 0
Embedded Paths: 0
Points: 4
☐ Invert
☐ Outside Edges Only
☐ Restrict To Box
Apply
Cancel
OK

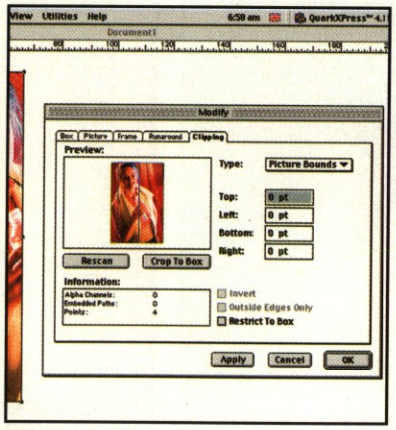
2 Type Ctrl-Alt-T (Windows) or Command-Option-T (Mac) to open the Modify dialog window with the Clipping tab selected. Click on the pop-up list next to Type and change it from Item to Picture Bounds. Then remove the tick next to the Restrict To Box option at the bottom. Click OK.



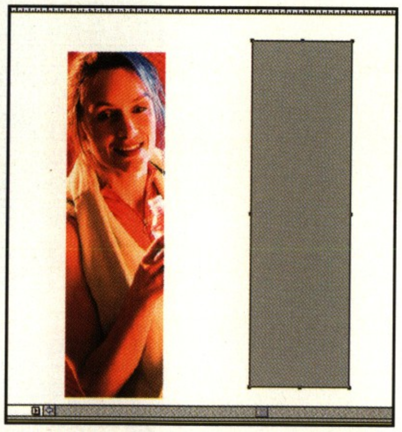
3 Now when you click and drag on the image inside the picture box, you will find you can actually drag it out of the box altogether. With experimentation, you should notice that you can only drag as far as the image boundary extends. Use the Item tool to move them as a pair.



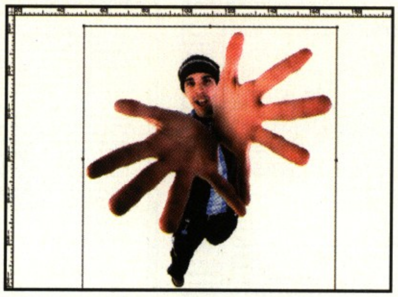
4 This feature could be used to create simple dropshadow effects as shown here. Because it's effectively one object rather than two, you don't have to worry about losing one when you move it around or resize it. The picture box can also be reshaped independently without breaking the link.


View
Utilities
Help
6:50 am
QuarkXPress™ 4.1
Document1
Modify
Box
Picture
Frame
Runaround
Clipping
Preview:
Type: Picture Bounds
Top: 0 pt
Left: 0 pt
Bottom: 0 pt
Right: 0 pt
Rescan
Crop To Box
Information:
Alpha Channels: 0
Embedded Paths: 0
Points: 4
☐ Invert
☐ Outside Edges Only
☐ Restrict To Box
Apply
Cancel
OK

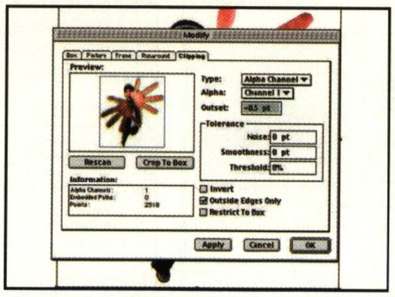
5 With the picture still selected, re-open the Modify Clipping dialog window (part 1, step 2) and put the tick back next to Restrict To Box. Click OK and then re-crop the image. Back in the Modify Clipping dialog, remove that Restrict To Box tick again and click on the Crop To Box button.



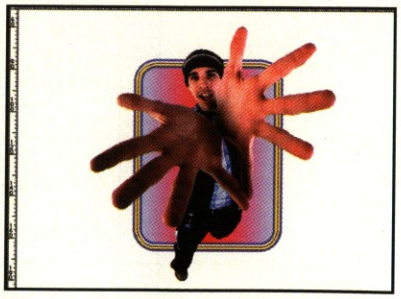
6 Click OK and see what XPress has done – you can drag the image out of the picture box just like you did before, but this time it's just the cropped area that appears. This means you can still perform the dropshadow trick without having to use the entire image area.



7 Let's try another idea using the same feature. Create a new picture box and put an image in it. Use an image which contains an embedded clipping path or Alpha channel, or has a cut-out friendly white background. The screenshot here shows the kind of thing you want.


Modify
Box
Picture
Frame
Runaround
Clipping
Preview:
Type: Alpha Channel
Alpha: Channel 1
Outset: -0.5 pt
Tolerance
Noise: 0 pt
Smoothness: 0 pt
Threshold: 0%
Rescan
Crop To Box
Information:
Alpha Channels: 1
Embedded Paths: 0
Points: 2510
☐ Invert
☑ Outside Edges Only
☐ Restrict To Box
Apply
Cancel
OK

8 Open up the Modify Clipping dialog yet again. Depending upon how you want the cut-out to be recognised, select Alpha Channel, Embedded Path or Non-White Areas to define the clipping. Then remove the tick next to the Restrict To Box option, as before. Click OK.



9 You will now be able to resize the picture box so that's it's smaller than the image. Type Ctrl-B (Windows) or Command-B (Mac) to give it a frame. Fill it with background colours. You now have a nifty breakout effect, and the whole thing is just one manageable page object.

Part 3: Multiple alphas per image

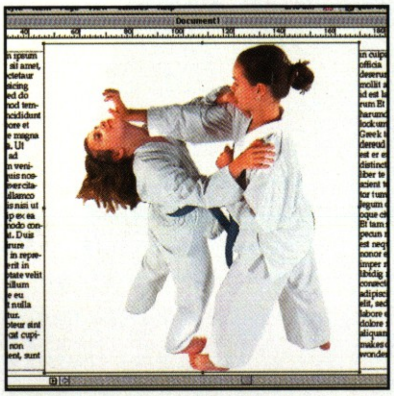
Now you've learned to use clippings and runarounds separately, put them together to produce unusual combination effects within just a single image

Minus outset

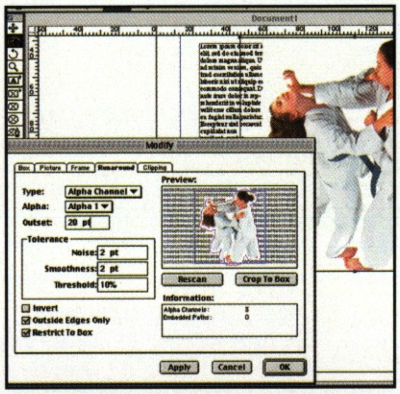
Because *XPress* effectively converts imported Alpha channels to its own format of clipping path, there is always the risk of letting background bits slip in around certain edges. You may well notice this on screen as you work. You can compensate for this by reducing all the Tolerance values in the Modify Clipping dialog window to zero, and then applying a small negative measurement to the Outset value, such as -0.5pt.

Shaped text

There's another trick you can try, this time for creating complex, irregularly-shaped text boxes. In *Photoshop*, save your Alpha channels or clipping paths to a totally blank image. Place this image on your page over some text. In the Modify Clipping dialog window, select the clipping and add a tick next to the Invert option. Do the same in the Runaround tab. Click OK to force the text inside the path shape, and adjust to fit.

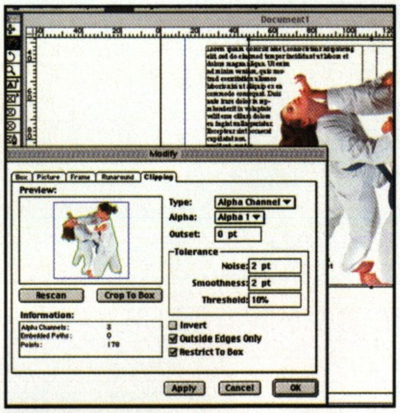


1 For this exercise, you'll need a cut-out image containing two characters – balloons, people, whatever. Prepare the image in *Photoshop* by painting an Alpha channel to cut out the background. When you bring it onto your *XPress* page in front of a text box, you'll end up with something like the above.


Document1
Modify
Box
Picture
Frame
Runaround
Clipping
Preview:
Rescan
Crop To Box
Information:
Apply
Cancel
OK

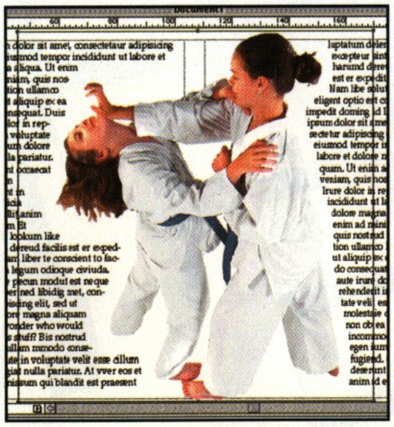
Type: Alpha Channel
Alpha: Alpha 1
Outset: 20 pt
Tolerance
Noise: 2 pt
Smoothness: 2 pt
Threshold: 10%
☐ Invert
☑ Outside Edges Only
☑ Restrict To Box

2 Press Ctrl-T (Windows) or Command-T(Mac) to open the Modify Runaround dialog window. Click on the Type pop-up list and change it from Item to Alpha Channel. The text will run around it. Click Apply to preview the effect. Hang on, half the text seems to be vanishing – what's going on?

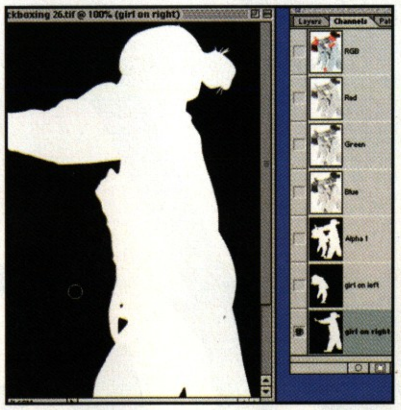

Document1
Modify
Box
Picture
Frame
Runaround
Clipping
Preview:
Rescan
Crop To Box
Information:
Apply
Cancel
OK

Type: Alpha Channel
Alpha: Alpha 1
Outset: 0 pt
Tolerance
Noise: 2 pt
Smoothness: 2 pt
Threshold: 10%
☐ Invert
☑ Outside Edges Only
☑ Restrict To Box

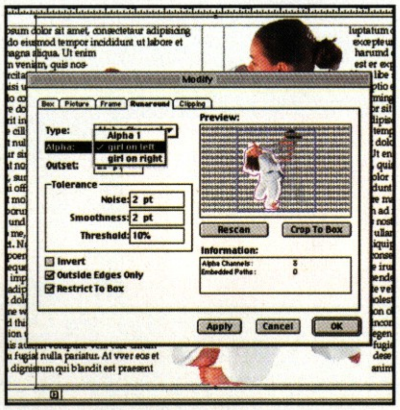
3 Apparently, it's not enough to designate a runaround path in *XPress*: you must do the same with the clipping path if you want it to work properly. Click on the Clipping tab and select your Alpha channel again. If necessary, go back to Runaround and increase the Outset value.



4 Click OK and you should see the text runaround effect working properly at last. Unlike our Christmas decorations example earlier, you're looking at an image that is both a cut-out and a runaround, using the same Alpha channel as the basis for the two clipping paths.

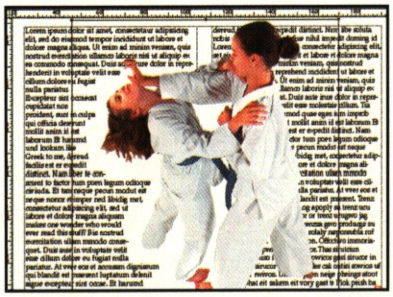

kboxing 26.tif @ 100% (girl on right)
Layers
Channels
RGB
Red
Green
Blue
Alpha 1
girl on left
girl on right

5 Now re-open the image in *Photoshop*. Right-click (Windows) or Ctrl-click (Mac) the Alpha channel in the Channels palette and choose Duplicate Channel from the context menu. In this new channel, paint out one of the characters in the image. Repeat the duplication of the original alpha and paint out the other character.

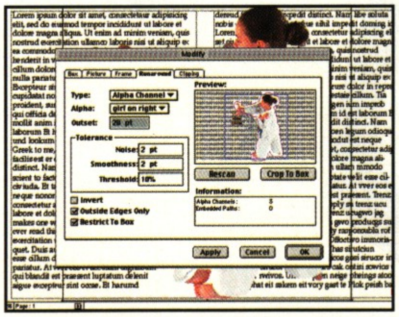

Modify
Box
Picture
Frame
Runaround
Clipping
Type:
Alpha:
Alpha 1
✓ girl on left
girl on right
Outset:
Preview:
Rescan
Crop To Box
Information:
Apply
Cancel
OK

Tolerance
Noise: 2 pt
Smoothness: 2 pt
Threshold: 10%
☐ Invert
☑ Outside Edges Only
☑ Restrict To Box

6 Having saved the image along with its two new Alpha channels, you can now bring it back onto your *XPress* page. Open the Modify Runaround dialog window as before and select Alpha Channel from the Type pop-up list. This time, you can now also choose from all three channels you created.

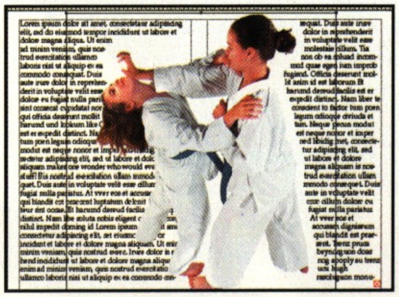


7 Here we've chosen the channel which painted out everything except the girl on the left. She remains a runaround object but notice how the text runs behind the other girl. Obviously this text is unreadable but you could use this trick to create some interesting background-type texture effects.

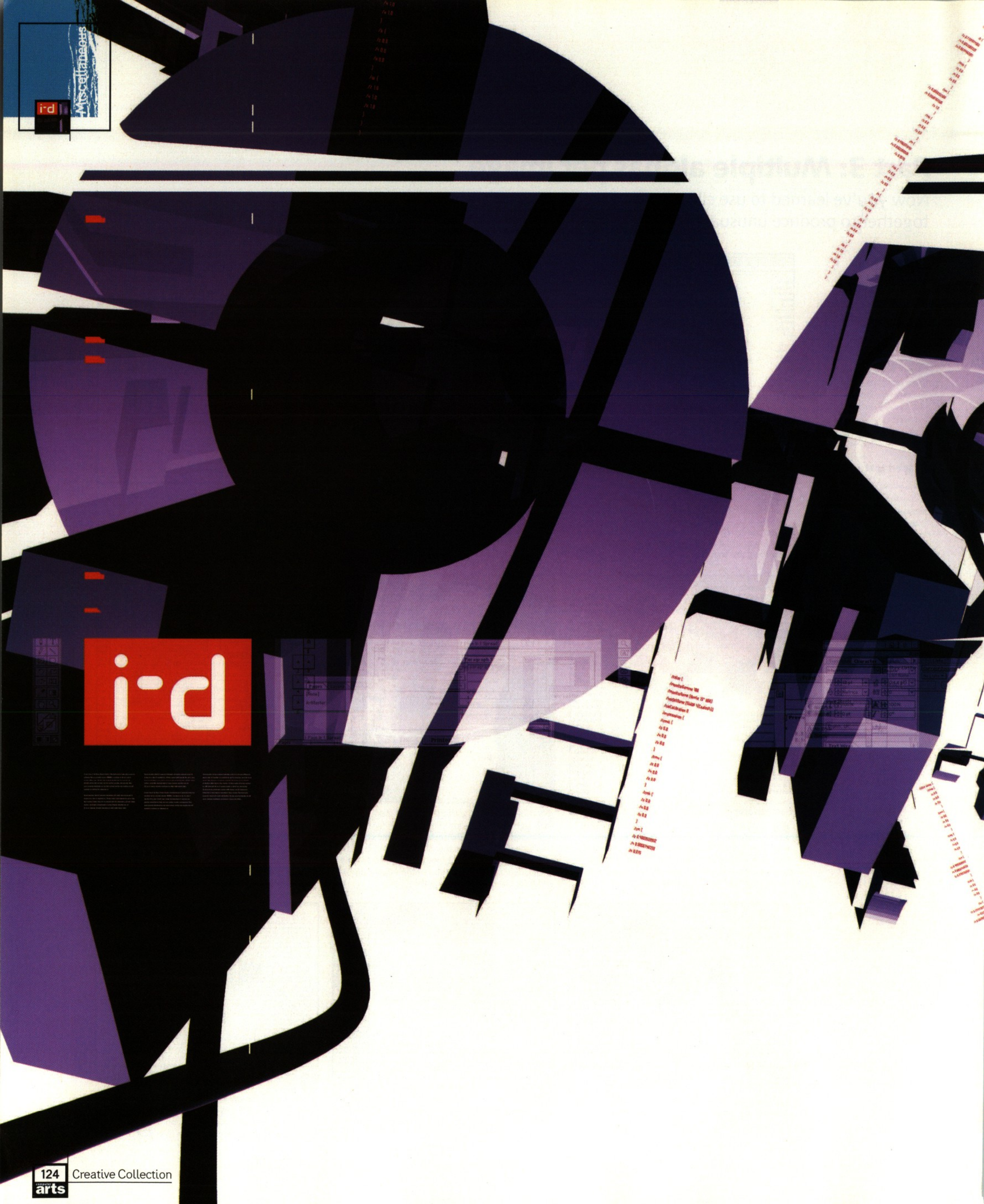

Modify
Box
Picture
Frame
Runaround
Clipping
Preview:
Rescan
Crop To Box
Information:
Apply
Cancel
OK

Type: Alpha Channel
Alpha: girl on right
Outset: 20 pt
Tolerance
Noise: 2 pt
Smoothness: 2 pt
Threshold: 10%
☐ Invert
☑ Outside Edges Only
☑ Restrict To Box

8 Nip back into the Modify Runaround dialog window again. Click on the Alpha pop-up list and choose the other channel which you created in step 5. In our case, it's the one which only shows the girl on the right. Click OK to see the result.



9 This time, the runaround and run-behind are reversed. The principal thing to bear in mind that this effect is the result of using one Alpha channel for the clipping and a completely different channel for the runaround. And you thought *XPress* couldn't do type tricks like this! ca


i-d

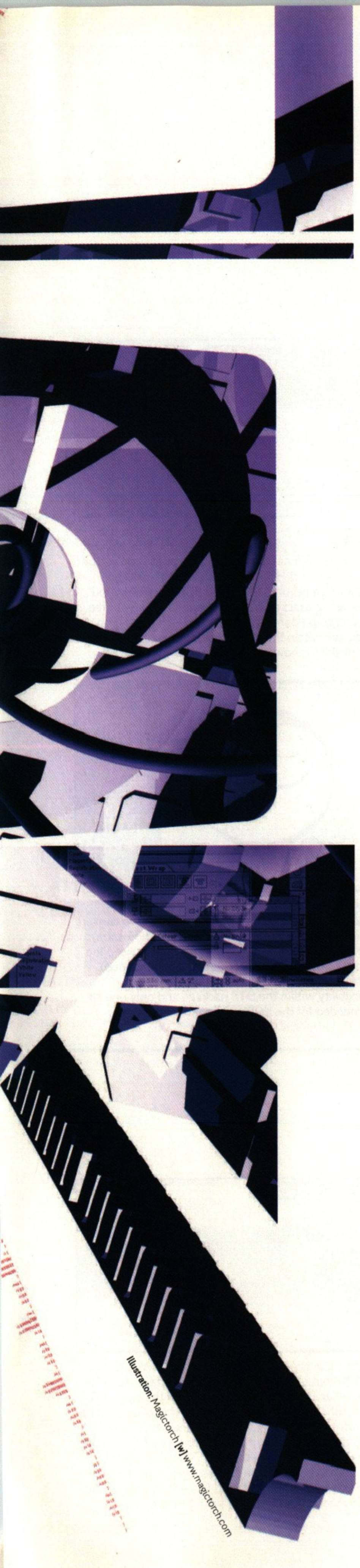


Illustration: Magictorch [w] www.magictorch.com

Designing for print: a real world solution

Here we guide you through all the different stages required to create the front cover of a CD and prepare it for printing by a commercial print shop

Laying out a page seems easy. Desktop publishing programs put the power of professional tools at the fingertips of anyone who can use a computer: in a few steps, pictures, graphics and type can be applied to a page. When you're working on design jobs that need to be seen right through to the print shop, tight control over your material is required.

Designing for print can seem like an uphill climb, with its large graphic file sizes, laws about line screen and dots per inch, the imperative need for colour accuracy and proofing devices. But when you see your creation rolling off the printing press, the feeling of satisfaction is beyond compare. To help designers moving into print understand some of the fundamentals of a practical situation, we have prepared a typical dummy commission.

The brief is this: the manager of a small band has called up. He has asked you to design the cover for the group's new CD. They've requested 1,000 covers for their first independently-produced album, printed in full colour with other areas in a fifth colour such as fluorescent green. You've been given various raw elements, including photos, text files of the song list and biography of the band, and an EPS of the record label's logo.

The print shop is printing the job two-up, work-and-tumble onto SRA3 and requires the artwork supplied on disc. They will be outputting the colour-separated film in-house to the following specifications: right-reading positive film, with a half-tone frequency of 150 (RR, +ve, HTF150).

This tutorial uses *InDesign*, but the principles can be applied to any pro DTP package.

Files on disc

The files for this tutorial are on the coverdisc in a folder called Tutorials\Miscellaneous\Designing for print. You can download a 60-day demo of *InDesign 1.5.2* from the Adobe website [w] www.adobe.co.uk

Artwork and expertise supplied by Andrew Woollacott

[e] tree@rootydesigns.co.uk

Part 1: Preparing your files

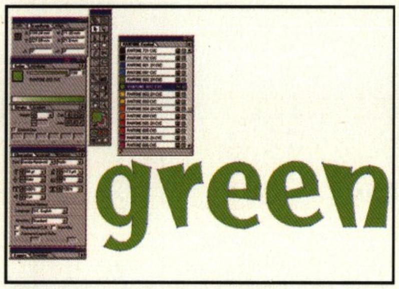
Before you start designing, it's possible to save a lot of time by correctly preparing the images to be used

Spot colours and process colours

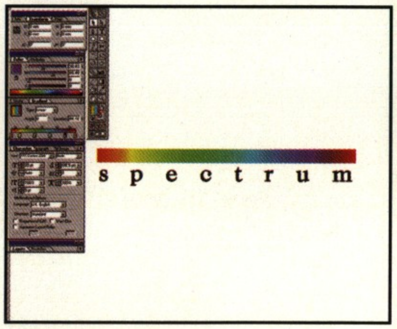
From just four colours – cyan, magenta, yellow and black (CMYK) – your local print shop can print in full colour, similar to a photograph. However, this process does have limitations and spot colours exist for just that reason. Spot colours cannot be reproduced exactly using the CMYK process and are often used where full colour printing isn't required or when a particularly strong colour (in this case, fluorescent green) is needed. The Pantone colour library is recognised around the world as the print industry standard for colour reproduction, meaning that the colour chosen in England will be the same as the colour used by a print shop in China, providing it has the same reference number.

But TIF files are so much bigger than JPEG

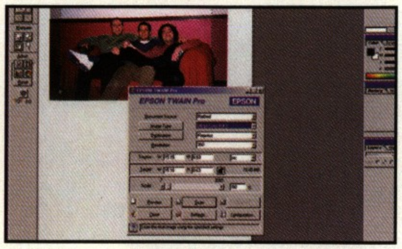
That's because JPEG files have been compressed and optimised. The amount of optimisation can radically reduce the final quality of the image on the printed page. Some DTP packages also have trouble de-coding JPEG's compression methods – the conclusion? Avoid using JPEGs in your DTP documents.



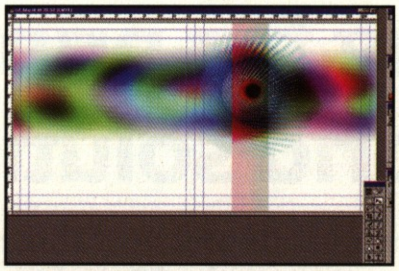
1 The band's name logo is required to be printed in a spot colour (for this instance Pantone 802c). We have coloured the logo in *Illustrator* using Window>Swatch Libraries>Pantone Coated and selecting the colour required. When this file is imported into *InDesign*, the spot colour information will be retained.



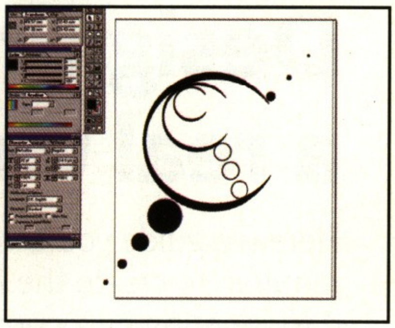
2 The record label has supplied its logo as a broken apart CMYK *Illustrator* file. This will import directly into the DTP software and will separate alongside the normal CMYK separations without any further work being done to it.



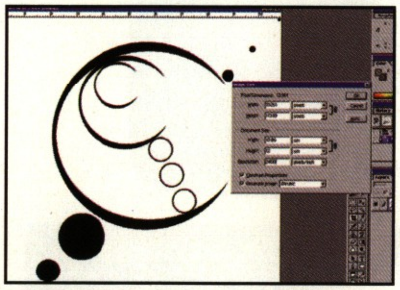
3 When scanning the band photo, it is best to scan any photos at a resolution a little beyond what you will need. We know the print shop will be making film at HTF150, so scanning the image anywhere beyond 300dpi is sufficient. Unless you know the exact crop you are going to use with the photograph don't crop the image – you can crop all you like within the DTP package giving you tighter control over how the image looks.



4 Create a background image (for example in *Photoshop*). If bleed is required (printing to the edge of the page) make sure that the image is between 3–5mm bigger than the finished document size. Use ruler guides to help position aspects of your image – the page edge and margins and so on. If these dimensions are not yet known, set up the page in the DTP software before spending any time on the image.



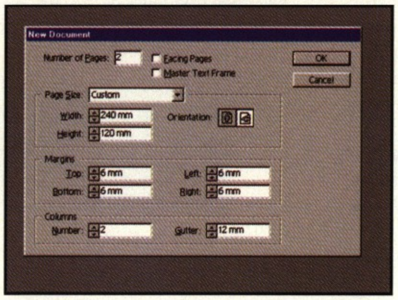
5 Create any line art in a vector-based program, such as *Illustrator*. If the image is only being used once or twice, and the exact colours and tints are known, select the colours required and save each different version as a different file ready to import into the DTP package as an EPS file.



6 If the line art is to be used repeatedly in different colours and tints, it's better to convert the image to a flat bitmap TIFF file (in *Photoshop*). The image must be at a high resolution to keep the edges smooth (about 2400dpi is recommended). This balloons the file size, but offers greater flexibility within the DTP package and only one file is needed for the multiple placements.

Part 2: Building your page

The next step is to create a pleasing design using the basic tools



New Document

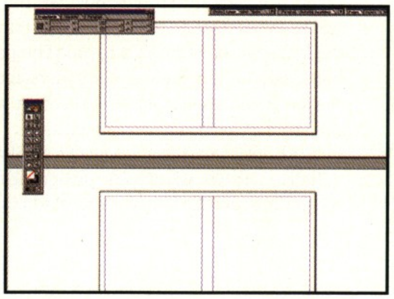
Number of Pages: 2
☐ Facing Pages
☐ Master Text Frame

Page Size: Custom
Width: 240 mm
Height: 120 mm
Orientation:

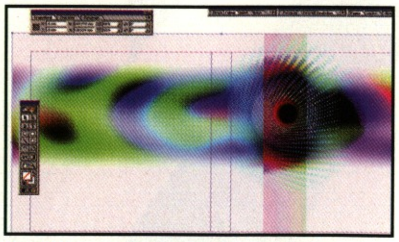
Margins
Top: 6 mm
Bottom: 6 mm
Left: 6 mm
Right: 6 mm

Columns
Number: 2
Gutter: 12 mm

1 Decide on the page size. If you are uncertain, measure somebody else's! A flat CD sleeve is 120x120mm. This could be designed as four pages of this size, but, because we need to run an image across the whole length of the sleeve, we are going to create the whole outside and the whole inside of the sleeve in their entirety.



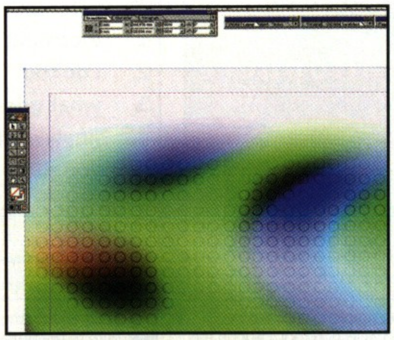
2 Go to File>New and set up a two-page document: page size to be 240x120mm, with 6mm margins all around, and two columns with a 12mm gap. One of these pages will be the outer cover, the other the inner. It will need to fold in the middle, hence setting up two columns with a gap twice that of the margin.



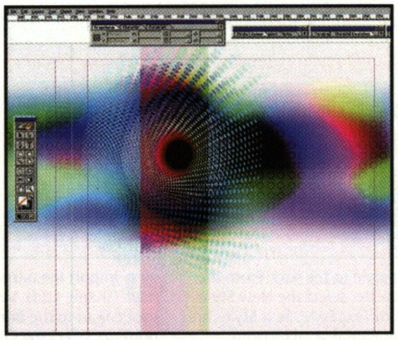
3 Take page 1 as the outside cover. We now need to place the background image, so go to File>Place and choose Cd_bkg.tif on the cover CD. Do not embed the graphic image. If you look on the Transform palette, you will see nine points on a square. Select the top-left corner and set x-position to –5mm and y-position to –5. The background image was prepared in *Photoshop* to have 5mm of bleed on all edges. Off-setting the image allows for any inaccuracies once the job is printed.

Need a clean screen?

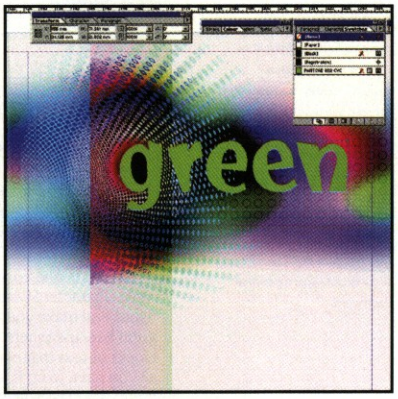
In *InDesign*, at any time press: Tab (removes tool dialog boxes), Ctrl+H (removes frames edges), Ctrl+; (removes margin and ruler guides). All these options toggle on and off.



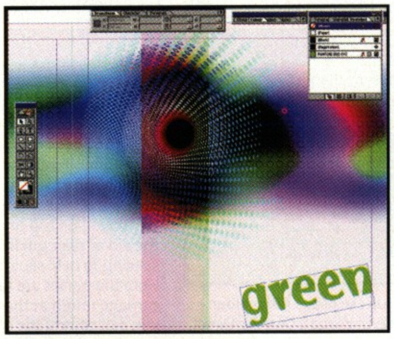
4 When tackling this type of project, it is easier to visualise the page with a few helping markers. First, place a ruler guide at 120mm on the x-axis. This is where the fold will be. Next, crop the image so the edge of it falls where the actual page edge is. Use the Selection tool and move the anchor points until you have the perfect crop. You can double-check on your Transform palette – x=0, y=0.



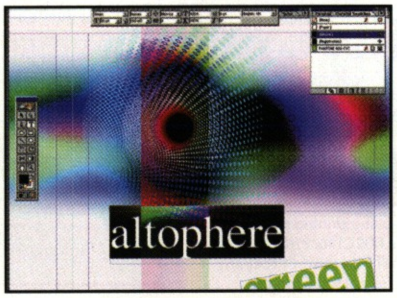
5 The right-hand part of the page will end up being the outside front cover, (the left-hand side being the outside rear cover). DTP packages really come into their own when you begin to build your document: you can place any element (text or graphics) anywhere on the page. That is why setting your margins, and keeping the important elements within those margins is so imperative.



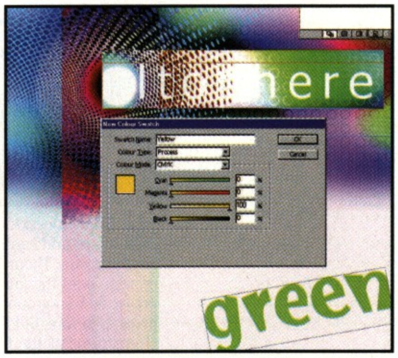
6 Place the band's name logo (File>Place and green.eps on the cover CD). Check in the Swatches palette (Window>Swatches) – you will see that the EPS file has automatically imported the spot colour chosen earlier (in this case Pantone 802C).



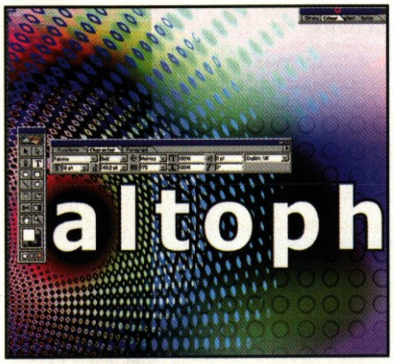
7 By selecting an anchor point, and holding a combination of Shift+Ctrl+left mouse (Shift+Command+click on the Mac) button and dragging it, is possible to alter the proportions of the selected graphic. Use a combination of ariale-sizing and rotating to position the image. Remember: this position isn't final. At any point, you can simply pick this image up and reposition it.



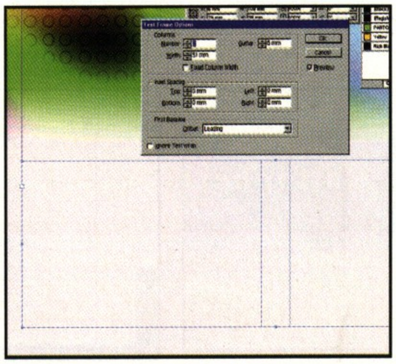
8 Select the Text tool and click and drag on the screen. Type in the title of the album. With the text highlighted, it is possible to edit the typeface, point size, kerning and a whole host of other effects using the Character palette. Once happy with the typeface and size, it is good practice to drag an anchor point out to a margin. This helps keep everything neat and tidy. If text boxes are left to run wildly off the page, it causes problems later when manually paginating the document.



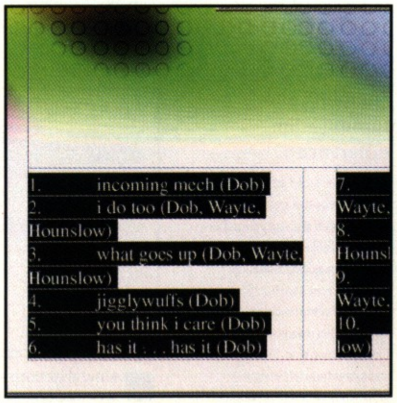
9 To create a new colour to use in the document, click on the flyout of the Swatches palette and select New Colour Swatch. This offers a pop-up with colour sliders, which show the CMYK percentage breakdown of the colours available, enabling you to mix your own colour swatch that is usable throughout the document.



10 If you think your title doesn't stand out enough against the background, apply a Stroke (outline) to it. If you are applying a black outline, don't use a C=0, M=0, Y=0, K=100 mix. Instead use a C=50, M=50, Y=25, K=100 mix. You won't see the difference on your screen but it makes a much deeper black colour on the printing press.



11 When multiple columns of text are needed, the most powerful way to control them is to use text frames. Select the Text tool then click and drag from one margin to the other. Then choose Object>Text Frame Options. This dialog box enables control of the width of columns and other properties that affect how the text flows.



1. incoming mech (Dob)
2. i do too (Dob, Wayte, Hounslow)
3. what goes up (Dob, Wayte, Hounslow)
4. jigglywuffs (Dob)
5. you think i care (Dob)
6. has it . . . has it (Dob)

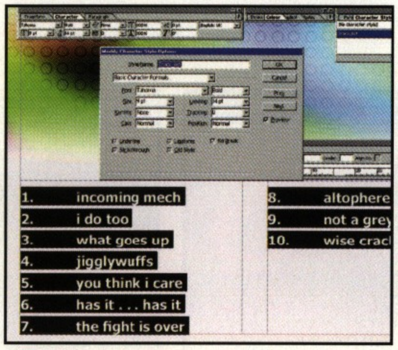
7. Wayte,
8. Hounsl
9. Wayte,
10. low)

12 Copy and paste the text from \Track_Listing.doc into the text frame. Don't worry too much at this stage if it looks a mess! For this instance of the track listing, we don't need the artists' names, so delete them.

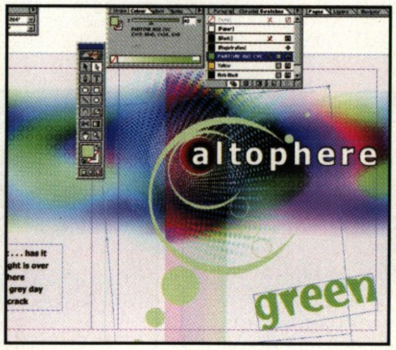
Part 2: Building your page continued...

Text Styles

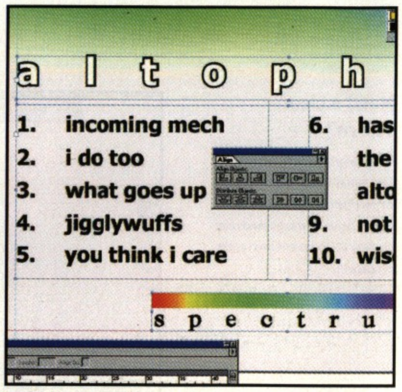
To help keep a document looking uniform, it is advisable to set up a few different type styles and use them throughout. The main areas recommended are: headline – the title of a page, strap – explains a little more about the project, subhead – picks out the main points, body text – is what the main bulk of the text is set in, caption – to describe photographs, and so on. Try not to mix sans serif fonts with serif, and if you use all capitals for a headline style, be sure to use a double space between each word.



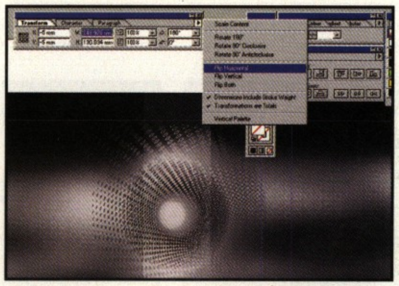
13 Create and apply a style to the text. From the Character Styles palette, select the New Styles flyout and make your own Text Style. Text Styles are good because where there are several separate blocks of text that need to run in the same format, all you have to do is attach the chosen Style to them. If a mass edit is required, simply edit the Style. The text blocks will automatically update.



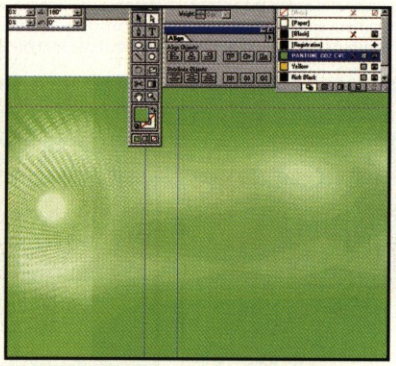
14 Import the bitmap line art image (shape_1.tif). We now want to apply a tint of a spot colour to the bitmap graphic. Once it is in position, select the Direct Selection tool, click on the image, choose the colour you require from the Swatch Library, then select Window>Colour. You can control the strength of the tint required from the Palette that appears.



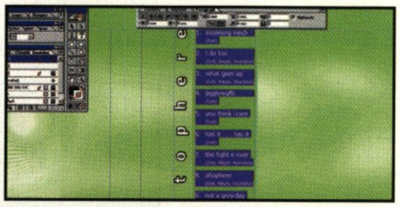
15 After adding the album title and record label logo to the outer back cover we now have multiple items that we need to align. Window>Align brings up the dialog box that controls this feature. Select all the items you wish to be aligned then choose the option required.



16 The inside cover is being printed in two colours (black and Pantone 802C) for effect more than anything else. Theoretically, it wouldn't cost any more to print this job in full colour. Drop the greyscale background (cd_bkg_gs.tif) image into place as before, but this time flip it horizontally (Transform Palette>Flip Horizontal).



17 We want to make full use of the fifth colour. Colour the greyscale.tif image using the Direct Selection tool in the same way as for the bitmap.tif.



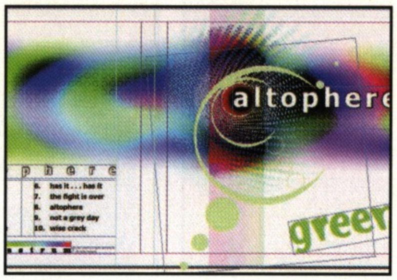
18 Continue assembling the inside pages. Simply Copy>Paste the logo from the front side. A black box runs across the whole width of the page, with the photo of the band (now a greyscale.tif) positioned on top of it, cropped to fit exactly with the aid of ruler guides and snapping. Use paragraph spacing to help separate the songs from each other. Here the names are tabbed onto the next line with a carriage return at the end. Using paragraph spacing, you can control the distance between the important factors without affecting the leading.

Part 3: Imposition by hand

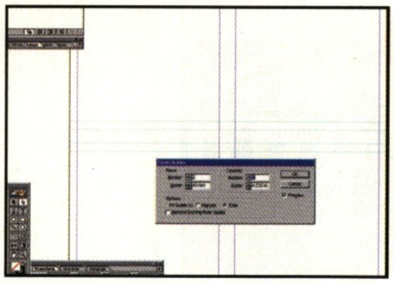
Although there is specialist software that can do this job, it is safer to do it manually, so it's a worthwhile skill to have in your repertoire

Tumbling and turning – the difference

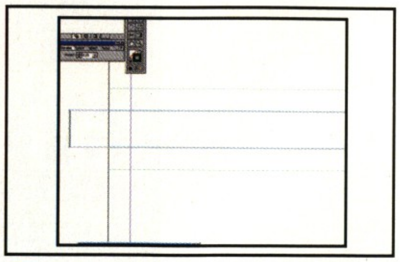
When a two-sided job is required to save the cost of extra film and plates, a print shop usually prints both sides of the job at the same time. This is possible because printing presses are finely adjusted. For the machine operator, this means work-and-turn (print one side, then turn the stack over from left to right – gutter runs vertically) or work and tumble (print one side then tumble head over foot – gutter runs horizontally). It depends on the job being printed.



1 Now that both sides of the cover are complete, we need to transfer it into a document that we can take to the print shop, and if we can supply it ready to output, it will save time and money. If you have not done so yet – spellcheck your document. Now also is a good time to get your customer in to have a look.



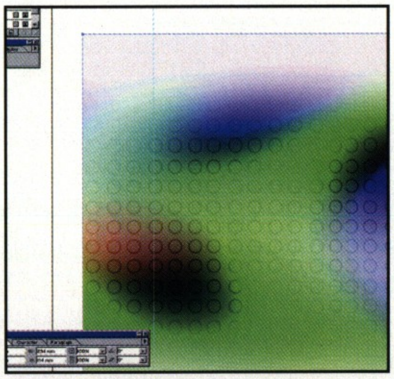
2 Create a new document. It fundamentally needs to have the same dimensions and margins as the CD cover document, except that one axis needs to be double + 10mm (for the gutter). This makes the document 240x250mm. On the long axis, add ruler guides that illustrate the gutter area and the margins above and below.



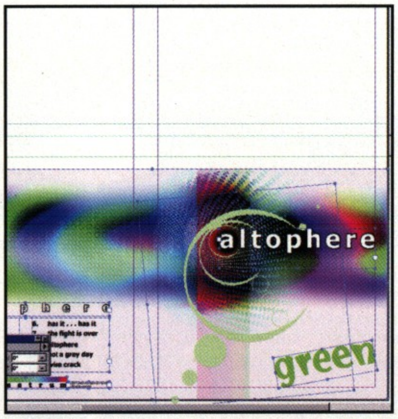
3 Create a box the same height as the gutter and about 20mm wider than the page width. Snap it to the gutter ruler guides. Apply a 0.25pt stroke, the colour of Registration. Registration appears solid on all separations and is the colour that crop and trim marks are printed. This box is to show where the gutter boundaries are once the job rolls off the press.

Line art: vector vs bitmap

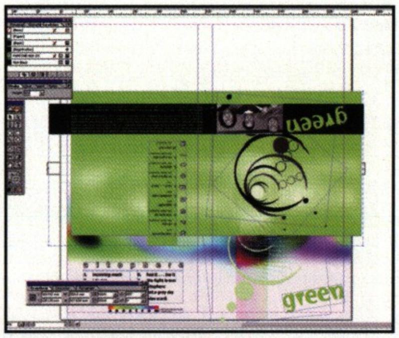
Vector artwork is fundamentally made up by mathematics. This means that it can be re-sized to any scale, and the edge of the graphic will always be smooth. However, in a DTP package, vector artwork can only be the colour it is imported as. If the same image is needed in different colours or tints, each instance has to be recreated and saved as separate files. Bitmap artwork uses pixels which means that if a bitmap file is re-sized beyond its threshold, a jagged edge will be seen. But in a DTP package, any colour and tint can be applied, meaning only one file is needed for multiple instances. With time and experience, you will learn which is better for the application you are designing for.



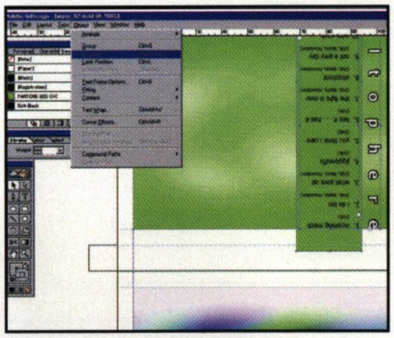
4 This is where the power of snapping really makes the job easy. Re-open the CD cover and crop the background image to the margins. Edit>Select All (making sure you pick everything up), and go to Edit>Copy. Keyboard shortcuts are very handy here.



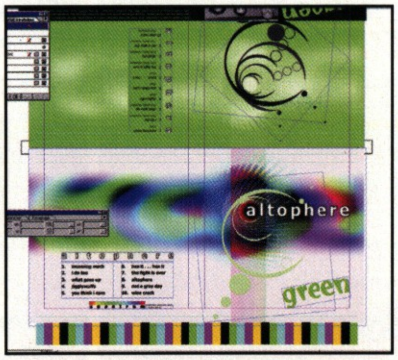
5 Back in the new document, go to Edit>Paste. If you have cropped accurately, and the margin guides are set up correctly, you can adjust the position so that the cover snaps perfectly into place.



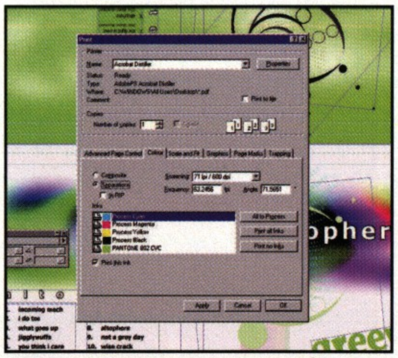
6 Repeat the last two stages for the inside of the CD cover, but once it is pasted into the new document (with everything just pasted still selected) go to Object>Group. We then need to rotate this new group by 180 degrees. It is best to use the Transform palette for this. If the software refuses to rotate, ensure you have the centre point selected on the Transform palette and try again.



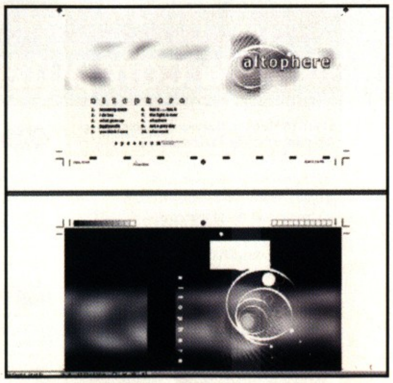
7 Once the inside cover is in position, Object>Ungroup the selection. The inside is upside-down because the job is being work-and-tumbled. This means the first side is printed, then the whole stack of paper is tumbled, then the second side is printed. If inside and outside were the same orientation when the second side was printed, it would appear upside-down.



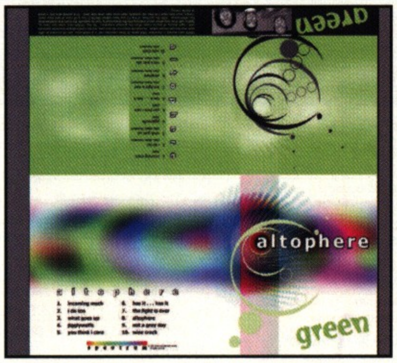
8 Uncrop all the background images, making sure that all edges bleed off all sides: this is why a gutter was added when this imposition document was set up. If there isn't an image on the page that bleeds off, there is no need for a gutter. Most print shops add their own colour bars, but if you need to add them, do so now.



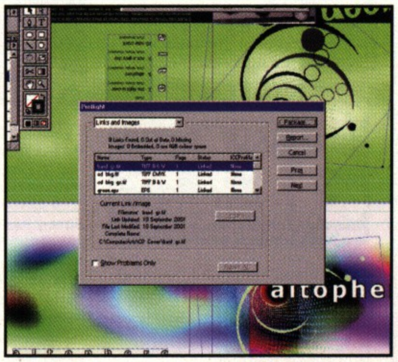
9 It is worth doing two print outs at this stage. Print out one in colour to check that all the edges bleed off and nothing has slipped while being paginated. A PostScript printer/driver will be needed to print EPS files accurately. If you don't have access to a PostScript device, you can check things on screen if you make a PDF of your job.



10 Print out two as a colour-separated document to ensure that everything is in CMYK mode except for the things that are to be printed in the Spot colour. When you get used to looking at a printed page like this you can see what colour the final output will be by how strong the tints are.



11 Now everything has been checked and double-checked, it is time to preflight the publication (File>Preflight). This handy function enables all fonts and links to be checked. If there is anything missing, or if an image is in RGB mode, it will tell you. From here the whole job can be saved, including all graphics and fonts, to a new location.



12 If you are doing a lot of this kind of work, it is a good idea to create a new folder on your hard drive and label each job individually. Print the report off and check all the files are in the new folder before burning to disk and sending it to the print shop with a colour print out of how you anticipate the job to look. ca

The final product

We've included PDF files of the finished CD label in the Tutorial folder on the CD. Impos_03 shows you what the final label will look like in CMYK colour. Meanwhile Impos_co shows you what it will look like when colour separated for the four plates.

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Future Publishing Ltd, FREEPOST, BS4900,
Somerton, Somerset, TA11 7B
[t] Customer hotline: 01458 271108
[f] 0870 444 8455
[e] ca.subs@futurenet.co.uk

Editorial 01225 442244
Garrick Webster editor
[e] garrick.webster@futurenet.co.uk
Matthew Harvey art editor
[e] matthew.harvey@futurenet.co.uk
Jeremy Ford CD editor
[e] jeremy.ford@futurenet.co.uk
Neil Worley production editor
[e] neil.worley@futurenet.co.uk
David Eachus Designer
[e] david.eachus@virgin.net

Contributors: **Richard May, Bill Fleming, Frank Bartucca, Jacey, Simon Danaher, Catherine McIntyre, Brendan Dawes, Rob Brearley, Mark Towse, Kerry Roper, Bomber Aldridge, twelve:ten design, Derek Lea, Karl Hodge, Esther Lamb, Paul Cummings, Nick Nettleton, Ben Smith, Chris Ollis, Magictorch, Alistair Dabbs, Andrew Woollacott**

Contact Computer Arts Special
Future Publishing, 30 Monmouth Street
Bath BA1 2BW [t] 01225 442244
[f] 01225 732361 [i] ISDN: 01225 789293
[w] www.computerarts.co.uk

CD problems
technical support cas.support@futurenet.co.uk
[t] 01225 822743

Overseas licensing
[e] simon.wear@futurenet.co.uk 01225 442244

Commercial Department Buyer
[e] colinpolis@futurenet.co.uk 01225 442244

Advertising
[t] 01225 442244 [f] 01225 732282
Simon Moss group ad manager
[e] simon.moss@futurenet.co.uk
Kelley Corten advertising manager
[e] Kelly.corten@futurenet.co.uk

Damian Hughes business development mgr
[e] damian.hughes@futurenet.co.uk
Andrew Healy senior sales executive
[e] andrew.healy@futurenet.co.uk
Bryony Watts senior sales executive
[e] bryonywatts@futurenet.co.uk
Andrew Young sales executive
[e] andrew.young@futurenet.co.uk
Lee Thomas production co-ordinator
Fiona Tully marketing executive
Richard Wilson publisher
John Weir group publisher
Colin Morrison managing director

Distribution
Seymour Distribution, 86 Newman St, London
W1P 3LD [t] 020 7396 8000
Jamie Malley circulation product manager
[e] jamie.malley@futurenet.co.uk

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